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The Dynamic Effects of Political Parties and Economic Hardship on Voter Turnout

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To the Graduate Council:

I am submitting herewith a dissertation written by Allan M. Wilford entitled "The Dynamic Effects of Political Parties and Economic Hardship on Voter Turnout." I have examined the final electronic copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Political Science.

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The Dynamic Effects of Political Parties and Economic Hardship on Voter Turnout

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DEDICATION

To my wife Kate

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ABSTRACT

In the last 50 or so years, observers have noted with concern declining rates of voter turnout in many democracies. Explanations for these declines have often focused upon institutional factors that explain differences in turnout between countries but do little to explain declines within countries. However, the suspicion remains that more dynamic factors such as the make-up of party systems or economic effects - factors which vary within countries over time – have greater potential to better explain these declines. The first substantive chapter of this dissertation considers number of parties and polarization jointly to identify the conditions under which party systems matter for turnout. Findings show that the composition of the party system as a whole is a key determinate of a voter's propensity to vote. In addition to declining levels of turnout, there has also been a perceived narrowing of ideological diversity in many party systems, with, in particular, many parties on the left moving towards the center. The second substantive chapter of the dissertation replaces poorly performing aggregate measures of polarization and number of parties with a novel measure of left party strength. Findings show that measures of party systems that capture left party strength have a significant and substantial positive association with voter turnout. The final substantive chapter considers the effect that the economy has on turnout. While there is a strong theoretical expectation that economic hardship should be negatively associated with turnout, results have been decidedly mixed. However, I propose that patchy results are largely due to the potentially confounding effects of economic hardship and inequality. By considering both of these factors in models of turnout, the effects of each should become clearer. Furthermore, the effects of both inequality and economic hardship are predicted to affect individuals differently depending upon their socioeconomic status. By controlling for this variation and considering both

economic hardship and inequality jointly with socioeconomic status, clearer associations are uncovered. Findings show that economic hardship negatively affect rates of participation for those individuals from lower socioeconomic backgrounds, while rising inequality is shown to negatively affect participation for individuals from higher socioeconomic backgrounds.

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CHAPTER I: INTRODUCTION

1. Understanding Declining Voter Turnout

For many years the problem of low levels of voter turnout was viewed primarily as a problem peculiar to only the US and Switzerland. Both have had historically low levels of turnout with rates of participation regularly falling below 50% of those eligible to vote in national elections (Lutz & Marsh, 2007). However, since at least the 1980s, low levels of turnout have also spread to numerous other democracies with initially Finland and subsequently the United Kingdom also experiencing downward trends in turnout. Other countries also began to experience declining participation during this period with nations including the Netherlands, France and Greece also experiencing sharp declines in turnout. Figures 1.1 and 1.2 highlight this downward trend showing turnout at national elections from 1945 to 2013.[1] The data presented in Figures 1.1 and 1.2 highlight aggregate declines in turnout of around 15% of registered voters, and declines of around 13% with turnout measured as the percentage of eligible population. Whichever indicator is used, it is clear that turnout declined steadily in recent decades, furthermore, this trend is far from peculiar to any single geographic location, with many more established democracies in Western Europe and several newer democracies in Eastern Europe all experiencing declining turnout in recent years (Kostadinova, 2003).

While declining turnout is hardly desirable, it is also true that many citizens continue to regularly participate in elections and show little sign of withdrawing from the political process. Furthermore, these declines remain modest, merely translating into a one-fifth of a percentage point decrease per year in the aggregate turnout rate across our sample of countries. Many countries have also weathered

[1]. The following countries are included in Figures 1.1 and 1.2: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

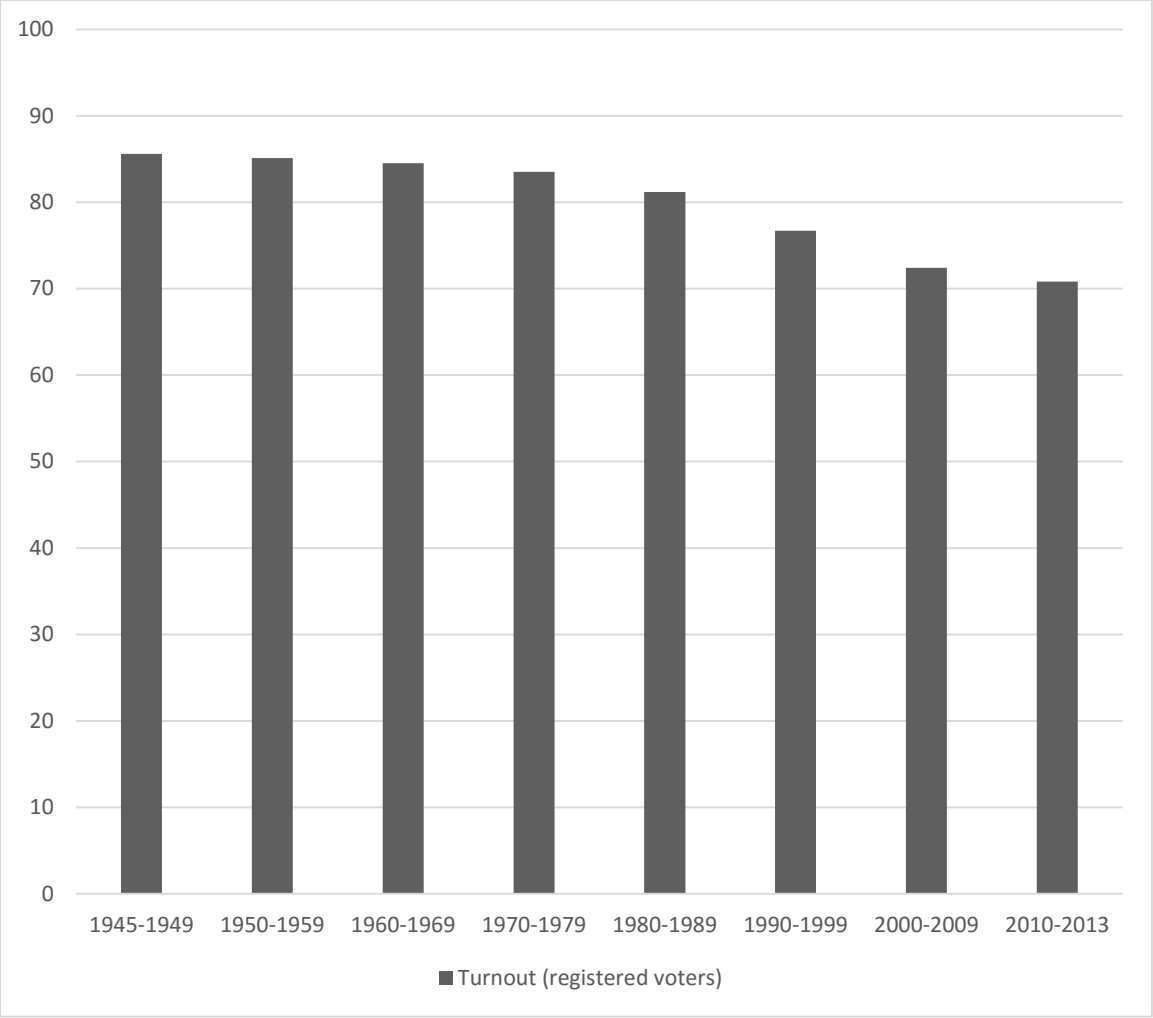

Figure 1.1: Turnout by decade as a percentage of registered voters in 26 democracies. Source: International Institute for Democracy and Electoral Assistance (IDEA).

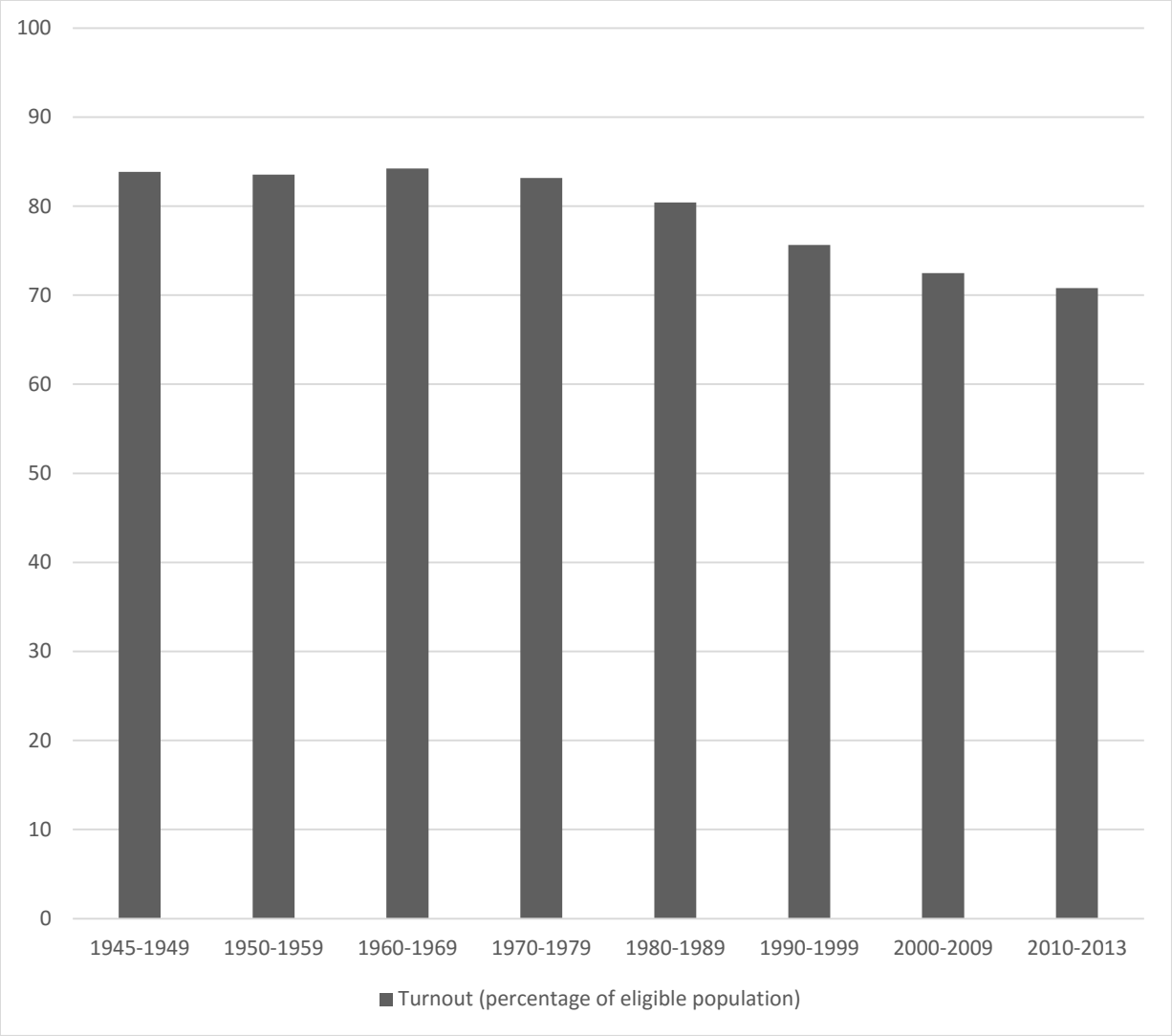

Figure 1.2: Turnout by decade as a percentage of eligible population in 26 democracies. Source: IDEA.

this phenomena better than others, with a handful of countries sustaining consistently high levels of turnout. For example, several democracies including Sweden, Norway and Denmark have seen little appreciable change in levels of turnout since 1945. However, there are several compelling reasons to not only be both concerned with these recent declines but also to try to better understand the reasons behind declining turnout. Firstly, while these declines are admittedly small, it is unclear if this trend will continue or if we are close to approaching a plateau or even a reversal. While the current aggregate rate of turnout of around 70% for both measures of turnout may not seem consequential, it is still unclear where or when this trend will exactly end. The incremental declines recorded over the last 70 years have in some respects been easy to ignore as they have been relatively small, a steeper more dramatic decline may have spurred more of a conversation amongst the public and closer attention from political scientists. Secondly, as turnout continues to decline normative concerns about the legitimacy and efficacy of representative democracy are also beginning to be raised. Regular political participation is regarded by many as essential to a healthy democracy, as without the participation of society at large many voices are not heard and some groups will likely be marginalized (Lijphart, 1998; Barber, 1984; Pateman, 1970). The legitimacy of democracy also suffers if turnout levels continue to decline to very low levels. The accountability and legitimacy of democratically elected governments suffer when many citizens fail to participate in the democratic process (Cavanagh, 1981; Salisbury, 1975). For example, the legitimacy of the Swiss government and the Swiss democratic system itself must be called into question if only around 40 percent of the eligible population participated in the 2011 general election. While Switzerland's mix of direct and representative democracy is in many ways unique, such low levels of participation are hardly conducive to building a vibrant and inclusive democratic society. Finally, there has long been the assumption that low levels of turnout have the potential to distort policy outcomes in

favor of those from higher socioeconomic backgrounds and the political parties they support. The vast majority of studies that examine political participation report findings that show how socioeconomic status is strongly correlated to voting (e.g., Almond and Verba 1963; Verba and Nie 1972; Verba et al. 1995) and as the political system listens more keenly to those who participate, a bias in favor of those from higher socioeconomic backgrounds who participate more regularly is predicted at lower levels of turnout (Lijphart 1997; Verba et al. 1995; Norris 2002). Therefore, low levels of turnout have the potential to delegitimize democratically elected governments if political parties further ignore the demands of many groups that fail to participate in the democratic process.

Voter turnout is also a potentially interesting area of study because much is still not known as to why turnout continues to decline across many democracies. Early work by Powell (1986) and in particular Jackman (1987) focused on the impact that institutions had on turnout and in particular how factors such as compulsory voting, the electoral system and the number of chambers affected turnout. In some respects this set the stage for a somewhat narrow research agenda that attempted to understand turnout through the effects of institutions. While many studies at the individual country level have focused on why turnout varies over time, this approach has been less prevalent in the comparative literature which has traditionally focused more on comparisons between countries. However, while institutional indicators often successfully explain variation in turnout *between* countries, they largely fail to account for declining levels of turnout *within* individual countries. Institutions are largely 'static' and their potential to explain the more dramatic recent declines in turnout within countries somewhat limited. In other words, something other than these commonly studied institutional factors is likely to be causing these declines within countries. Other more dynamic factors may have greater potential to explain these declines and two such factors, party system structure and economic

factors will be explored in this dissertation.

2. Outline of the Dissertation

The structure of the party system is one area that may help us understand declining levels of turnout. Intuitively, it would seem unlikely that the choices presented to voters at an election would have no effect upon turnout. By participating in the process of voting individuals are, after-all, selecting a party and making an assessment of the options available. While some individuals will always vote regardless of the choices available, others may refrain from voting if the choices available are unappealing. It therefore seems unlikely that a party system with a range of party choices spanning from the far-left to the far-right would not attract higher levels of turnout than a party system with two closely aligned centrist parties. However, results have been decidedly mixed and have often failed to unambiguously uncover a relationship (see for example Jackman 1987; Blais & Carty 1990; Jackman & Miller 1995; Blais & Dobrzynaska 1998; Radcliff & Davis 2000; Kostadinova 2003). Party systems are also more dynamic and thus have the potential to explain general declines in turnout within countries better than institutional indicators that typically don't vary over time. For example, the number of parties or the ideological positions of parties in a party system have more potential to vary within countries over time. In addition, there has also been a widespread perception of a narrowing of the ideological spread in many party systems, resulting in fewer 'real' choices for voters (Moschonas, 2011). Ultimately, party systems are a potentially interesting area of research as there is a strong theoretical expectation of an association between a narrowing of the party system and turnout, alongside a documented decline in turnout and a perceived narrowing of many party systems.

The first chapter proper of this dissertation (Chapter II) will propose that party system structures do affect turnout. Spotty results in the literature may be largely due to existing research treating proxy measures such as party polarization and number of parties as individual explanatory variables rather than combining them to reflect the effect of the party system as a whole. To better uncover the potentially complex interactive relationship between polarization and the number of parties, models should combine party polarization and number of parties given that the effect that number of parties has on turnout may depend upon the level of polarization in the system. By focusing on how polarization and number of parties interact to structure party systems which voters actually respond to, clearer relationships should be evident.

The second substantive chapter of this dissertation (Chapter III) will continue to focus on party systems and turnout, but will introduce a new theory that takes into consideration how party systems' potential to affect turnout depends on *where* variation is expected to occur (as opposed to assuming that changes to party systems would affect turnout uniformly). As already discussed, there are good reasons to suspect that party systems play a role in voter turnout and that this relationship has remained largely unrealized due to poorly conceptualized indicators in empirical analyses. Most extant studies have operationalized measures of party systems on the aggregate level, making the assumption that individuals would react uniformly to changes in party systems. In other words, more choice and diversity on the right would be expected to have a similar effect on turnout as more choice and diversity on the left. However, this approach ignores the resource model of participation which argues that individuals from higher socio-economic backgrounds have greater incentives to participate in politics than individuals from lower socio-economic backgrounds who have fewer resources (Verba & Nie, 1972; Brady et al., 1995; Smets & van Ham, 2013). As these individuals from lower socio-economic

backgrounds are less likely to vote, and when they do vote vote predominantly for parties on the left, the assumption is made that higher levels of turnout would benefit left parties. By borrowing this logic and applying it to the literature on party systems and turnout, it should also hold that the narrowing of party systems on the left should have a greater negative effect on turnout than a similar narrowing on the right. In other words, a party system with greater diversity on the right would have less capacity for increased turnout as individuals on the right already participate at high levels. If the resource model of participation is correct and voters on the left, by and large, vote less frequently than voters on the right, changes to party systems have the potential to affect left-of-center voters far more than right-of-center voters. Meaningful changes in diversity on the left may impact turnout to a greater extent than a more general increase in diversity in the political space, therefore measures of party system diversity need adjusting to more fully capture this variation. Results will show that party systems with high levels of left-party diversity should be positively associated with turnout, while party systems with high levels of right-party diversity should have no effect upon turnout.

In a departure from examining party systems, my final substantive chapter (Chapter IV) will examine how economic factors can affect turnout. While party systems may be expected to have an unambiguous relationship with turnout, the effect that economic factors have on turnout is theoretically less clear. Economic performance may be hypothesized to have a positive or conversely a negative effect upon turnout. For example, unfavorable economic conditions might be expected to increase participation as voters head to the polls to express their desire for change, or might instead encourage withdrawal from the political process as individuals engage in alternative methods of participation in an attempt to improve livelihoods. In other words, it is not clear that economic factors should be strongly theorized to have any relationship with turnout whatsoever.

It is therefore unsurprising that this lack of clear conceptualization has meant that economic factors have been under-explored in many comparative models of turnout. Studies at both the individual and country level have realized only mixed results (see Powell 1986; Lewis-Beck and Lockerbie 1989; Radcliff 1992; Aguilar and Pacek 2000). To capture economic effects on turnout, studies have routinely utilized indicators such as the annual unemployment rate at the country level or feelings of economic well-being at the individual level. More recently, several empirical studies have shifted focus away from indicators such as unemployment levels towards income inequality. Again, however, results have been mixed with a divide amongst studies that find support for the withdrawal hypothesis (Mahler 2002; Lister 2007; Anderson & Beramendi 2008; Solt 2010) and those that show null or mixed results (Brady 2004; Galbraith and Hale 2008; Stockemer and Scruggs 2012).

An alternative approach to untangling these effects is to instead examine both major predictors of economic hardship by considering income inequality and economic hardship jointly. I will argue that models of turnout need to include both inequality and economic hardship as these are not necessarily the same and potentially have confounding effects if they are not properly accounted for. Furthermore, the effects of inequality and economic hardship will depend upon socioeconomic status, with individuals from lower levels being most affected by these economic changes. The negative economic effects of increased inequality and economic hardship are most widely felt by those from lower socioeconomic backgrounds, therefore, participation rates of these individuals will be most affected by changes to these factors. Finally, individuals from lower socioeconomic backgrounds will have divergent responses to economic hardship and income inequality. Specifically, I would expect that rising levels of inequality will i*ncrease* turnout for those from lower socioeconomic backgrounds, while rising levels of economic hardship will *decrease* participation for those from lower socioeconomic backgrounds.

To conclude, Chapter V will restate my findings from the dissertation and discuss some areas of future research and the implications for turnout that this dissertation has uncovered. While much is known about voting and voter turnout there is still much work to be done in understanding why turnout continues to decline across many of the world's democracies. While this dissertation has hopefully made a contribution to our understanding of how party systems and economic factors affect turnout, there is still many gaps in our knowledge of voter turnout and political participation. Finally, the concluding chapter will also include a fully specified model with all key independent variables included and the results fully discussed.

3. Control Variables and Data

In deciding which cases would be examined for this study established democracies were eventually chosen. The reasons for this are two-fold. Firstly, these countries have conducted elections for a longer period than newer less established democracies and therefore have more data points to examine which should allow for better generalizations to be made. Focusing on established democracies also provides a uniform set of countries with similar characteristics. These countries are mostly all high-income economies with highly developed industrial bases and advanced economies. In sum, they are a not dissimilar group of countries. With that in mind, only Organisation for Economic Co-operation and Development (OECD) nations were considered for the subsequent analysis, with all founding members included alongside many newer members that have reliable data available for commonly used control variables. The following countries form the basis of estimation throughout this dissertation: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Iceland,

Ireland, Italy, Japan, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

In deciding which control variables should be included I largely followed convention and utilized as many commonly utilized controls frequently used in the literature. At the country level, many empirical studies of voter turnout routinely utilize a core set of control variables, many of which capture the influence of institutions and socioeconomic factors. While a handful of controls have both a consistent empirical record of predicting turnout allied to solid theoretical reasoning explaining any relationship, many others have shown to have inconsistent effects or frequently produced seemingly counterintuitive findings. With that in mind, the controls chosen can be broadly classified into two categories. The fist categories consist of controls which appear in most analysis of turnout at the country level and appear to have a consistent effect (compulsory voting, proportional representation, population size), while the second category includes controls which have had less success as predictors but are still regularly found in most models of turnout at the country level (number of chambers, founding elections, closeness of the election, weekend voting).

One of the most robust predictors of turnout is compulsory voting. Most studies control for compulsory voting as there has been an expectation since at least Jackman (1987) that compulsory voting should be positively associated with turnout. For example, many argue that Australia's high levels of participation are largely due to Australia's relatively strict compulsory voting laws. Compulsory voting is therefore likely to increase turnout as any compulsion to vote, especially is there is a cost associated to not voting, would likely increase turnout. Whether studies use a simple binary variable or a more complex discrete variable to differentiate between regimes with strict or weak compulsory voting laws, compulsory voting is expected to be positively associated with turnout. In cross-national studies

Jackman (1987), Blais & Carty (1990), Blais & Dobrzynska (1998), Mackerras (1999), Blais (2000), Fornos et al. (2004), Franklin (2004), Blais & Aarts (2006), Dalton (2008), Endersby & Krieckhaus (2008) and Stockemer & Scruggs (2012) all report the expected positive association. Only Radcliff & Davis (2000) and Perez-Linan (2001) failed to find an association between compulsory voting laws and turnout.

The type of electoral system in a country, such as proportional representation (PR) or plurality, is also expected to have a significant effect upon turnout. Conventional wisdom suggests that electoral systems with strict PR would be positively associated with turnout for a number of reasons. One such theory proposes that electoral systems which produce lower levels of disproportionality between votes and seats fosters higher levels of turnout because voters believe their vote is important and will not become a 'wasted' vote (Jackman, 1987). A further argument suggests that higher turnout is to be expected because parties compete across the entire country in PR systems and thus drive turnout (Lakeman, 1974; Powell, 1980; Blais and Carty, 1990). The empirical evidence for this association is also strong with Jackman (1987), Blais & Carty (1990), Jackman & Miller (1995), Franklin (1996), Blais (2000), Radcliff & Davis (2000), Perea (2004), Brockington (2004), Kostadinova & Power (2007), Endersby & Krieckhaus (2008) and Stockemer & Scruggs (2012) all finding that electoral systems with low levels of disproportionality are positively associated with turnout.

The number of legislative chambers is also a popular control in many models of turnout. The theoretical expectation is that democracies with unicameralism systems should attract higher rates of participation than democracies with bicameral systems. The explanation for this relationship centers on the notion that democracies with unicameral systems are closer to the will of the people as there is only a single legislative body between the people and legislation, while in bicameral systems a further potential barrier, or check, is inserted in this dynamic. Considering the fairly strong theoretical

expectations evidence for this effect is modest, with only Jackman (1987), Jackman & Miller (1995) and Fornos et al. (2004) reporting that turnout is higher in countries where power is concentrated in a single legislative chamber. Others, such as Blais & Carty (1990), Radcliff & Davis (2000), Perez & Linan (2001), Kostadinova & Power (2007) and Stockemer & Scruggs (2012) find no such association.

One of the more curious socioeconomic predictors of turnout is the size of the population of a country. Countries with large populations are shown to have lower rates of turnout than countries with small populations. Evidence for this association is fairly strong with Filler & Kenny (1980), Blais (2000), Gray and Caul (2000), Norris (2002), Franklin (2004) and Endersby & Krieckhaus (2008) all finding that countries with large populations experienced lower levels of turnout than countries with smaller populations. Others, such as Powell (1982) and Birch (2010) found no such association. Explanations for a negative relationship center on the notion that individuals in countries with large populations are somehow more disconnected from society and civic duty than individuals in small countries. Other explanations cite Downs' (1957) 'calculus-of-voting' model which suggests that voters only vote if the expected benefits outweigh the costs of voting, and with the probability that one can affect the election result presumably being greater in smaller countries, participation would be more likely in countries with smaller populations (Owen & Grofman 1984; Mueller 2003).

Similar reasoning also lies behind the inclusion of closeness, or decisiveness, of the election being included in models of turnout. Again, if an election is predicted to be 'too close to call' it may be expected that individuals would calculate that the probability of their vote affecting the election result would be high and so turnout should also be higher (see Blais 2000). Another theoretical possibility is that voters may be more likely to participate in an election if the result is likely to lead to dramatic changes in government policy. A close race may well motivate both supporters and opposition alike to

participate in an election and increase turnout. Positive associations are found in a handful of studies including by Blais & Dobrzynska (1998), Blais (2000), Stockemer et al. (2011), Stockemer & Scruggs (2012). Birch (2010) found no association and neither did Matsusaka and Palda (1999) or Copeland and Laband (2002) in two individual level analyses.

Ease of accessibility is also examined to ascertain if democracies which make voting easier facilitate higher levels of turnout. Vote-facilitating rules such as weekend or holiday voting are predicted to be positively associated with turnout. Intuitively, a positive association seems likely as by scheduling an election on a non-work day people should have ample opportunity to turnout to vote. However, evidence for this effect is somewhat surprising with positive associations only found by Franklin (1996) and Blais et al. (2003), while Gray and Caul (2000), Norris (2002) and Franklin (2004) find no association.

Finally, founding elections are also included due to the emergence of many new democracies since the end of the Cold War. Intuitively, there is the expectation that newly formed democracies should experience higher levels of turnout in founding elections immediately after becoming a democratic nation. The natural tendency for individuals and the media to be excited by the novel prospect of being able to cast a vote for the first time is theorized to increase turnout in these founding elections. Subsequent elections should realize lower rates of participation as disenchantment and discontent with the lack of economic growth and ineffectual political parties begins to erode confidence in the new democratic process (O'Donnell & Schmitter 1986; Mason 2003). Evidence for this effect is slight with Pacek, et al. (2009) finding modest support from newly formed democracies in Eastern Europe, while Fornos et al. (2004) finds a stronger relationship examining founding elections in Latin America.

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CHAPTER II: POLARIZATION, NUMBER OF PARTIES AND VOTER TURNOUT: EXPLAINING TURNOUT IN 26 O.E.C.D. COUNTRIES.

Abstract

Explanations of voter turnout at the party system level have shown only patchy results. However, the suspicion remains that levels of polarization and number of parties should have measureable effects upon turnout. This paper considers number of parties and polarization jointly in elections from 26 countries, to identify the conditions under which party systems matter for turnout. My findings show that the composition of the party system as a whole is a key determinate of a voter's propensity to vote. Highly polarized systems with few parties spur individuals to vote, while low levels of polarization and many parties reduce incentives to vote. The result has important implications for theories of turnout, resolving the confusion surrounding how party systems affect political participation

1. Introduction

In the last 50 or so years, observers have noted with some concern decline in rates of voter turnout in democracies across the world. While developed countries have experienced decades-long declines, even many newer post-communist countries have seen drops in turnout, with average turnout rates dipping from 80 percent or higher in initial elections to below 50 percent in recent times (Bernhagen & Marsh, 2007). Popular explanations for these declines have often focused on institutional predictors such as the type of electoral system or factors which encourage voting such as weekend voting and compulsory voting rules (Blais & Carty, 1990; Franklin, 2006). However, while these factors can often explain the differences in turnout rates between countries, many of these explanations often fail to explain variation within individual countries over time (Blais, 2006). While most individual country

level analyses have focused on why turnout varies over time, this practice has been less prevalent in the comparative literature which has focused more on comparisons between countries.

An alternative approach to explaining this general decline in turnout is to focus on party systems. While less closely studied than institutional factors, the composition of the choices available to voters is a potentially attractive predictor as it connects the voter with parties in an explanation of turnout. Intuitively, it would seem perverse to separate the act of voting from the parties available to choose from. After all, some appraisal of the parties on offer is presumably made before a voter visits the polling booth. However, studies which focus on the component parts of party systems such as polarization levels (Crepaz, 1990; Siaroff & Merer, 2002; Dalton, 2008) and the number of parties (Jackman, 1987; Blais & Carty, 1990; Jackman & Miller, 1995; Blais & Dobrzynaska, 1998) have shown only modest predictive results. An alternative approach is to instead examine party systems as a whole by considering polarization and the number of parties jointly. This chapter will argue that highly polarized party systems with few parties spur individuals to vote, while systems with low levels of polarization and many parties reduce incentives to vote. Patchy results thus far on the effect of party systems on turnout may be largely due to misspecified models that fail to account for the impact that number of parties has at different levels of polarization.

In what follows, my principle finding is that party systems meaningfully affect turnout, with turnout being higher in party systems with high levels of polarization and few parties, and lower in party systems with low levels of polarization and many parties. Empirical support for this argument is provided by analysis of voter turnout in elections from 26 countries between 1945 and 2013.

I begin by elaborating on the central theory that polarization and number of parties should be examined in conjunction to understand how they affect turnout. Next, I discuss the data and statistical

methods employed before presenting the empirical evidence. The chapter concludes with a discussion of the results and the implications of this study.

2. Number of Parties and Party Polarization

Previous attempts at examining party system effects on turnout have often focused on the number of parties, and, to a lesser degree the extent of party polarization. The relationship between number of parties and turnout seems self-evident, as the more parties voters have to choose from the greater the chance that a voter will find a party close to their preferred position. Calculating the number of parties has acted as a kind of shorthand measure of polarization, because it was assumed that number of parties would closely approximate the degree of polarization (Dalton, 2008). However, results have been decidedly mixed, frequently showing predominantly a negative relationship with turnout (Jackman, 1987; Blais & Carty, 1990; Jackman & Miller, 1995; Blais & Dobrzynaska, 1998; Radcliff & Davis, 2000; Kostadinova, 2003), or no relationship (Perez-Linan, 2001; Fornos et al., 2004).

An alternative indicator, party polarization, has also been examined by a handful of researchers. The underlying theory presupposes that party systems with a large degree of ideological differentiation will attract higher levels of turnout compared to systems with less differentiation. There are several different explanations for why this might occur. First, and most obviously, the ideological spread of a party system should affect the range of choices available to the voter and the voter's proximity to a favored party. Quite simply, voters should find it easier to find a party that more closely resonates with their own preferences in a more polarized political system. A further explanation adds a socio-psychological explanation of voting behavior, which views voting as an opportunity for individuals to express their political views. A wide political spectrum stimulates individuals to vote which then

increases levels of turnout. Polarization is therefore attractive as a variable as it addresses the counterintuitive results associated with number of parties and turnout by suggesting that it is in fact the 'range' (rather than the number) of choices that matter to voters. Polarization has shown promise as an explanation for voter turnout in some studies (Crepaz, 1990; Siaroff & Merer, 2002; Abramowitz & Saunders 2005; Dalton, 2008; Dodson, 2010), however, a study by Franklin (2004) found no such relationship, while Rogowski (2014) found a negative association between polarization and turnout in the U.S.

While polarization and number of parties have shown some success as predictors of turnout, confusion over the expected effect of number of parties alongside the dearth of studies on polarization, have diminished the popularity of party systems as a determinant of turnout. Intuitively, however, it is reasonable to suggest that the less attractive and wide-ranging the choices available to a voter, the less likely she would be to cast a vote. Furthermore, declining levels of turnout across many established democracies have also been accompanied by a perceived narrowing of the ideological spectrum, with parties migrating to the center-ground.[2] Preliminary data from this analysis support these general trends. Figure 2.1 utilizes data from 26 OECD countries from 1945 until 2013and illustrates declining levels of turnout amongst registered voters.[3] Turnout levels decline each decade from a high of 86 percent in the early post war years to the current low of 71 percent. During the same period,

[2] See for example Gerassimos Moschonas (2011) who uncovers a steady drift of European socialist and social democratic parties towards the center ground from 1950-59 to 2000-2009.

[3] The cases chosen are, by and large, determined by the availability of data. The following countries are included in the estimation: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States. The 1951 election in Luxembourg was not a national election but was held only in the North and Centre constituencies and the elections in the South and East

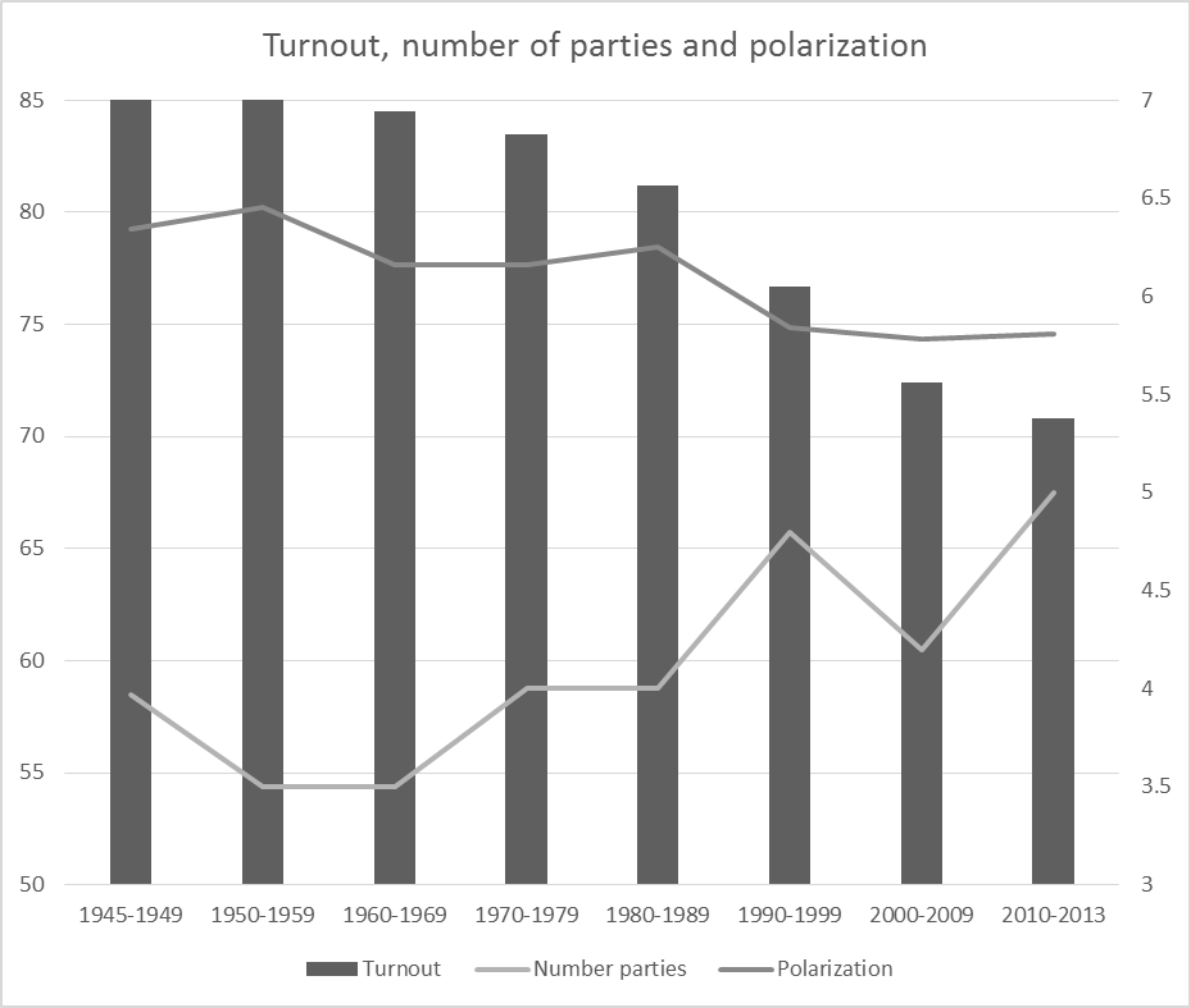

Figure 2.1: Polarization, parties and turnout by decade. Source IDEA.

constituencies were held in 1948 (Mackie & Rose, 1991). With this in mind, turnout levels were combined for these years.

polarization levels also declined, going from a score of 6.5 in the early post war years to only 5.8 in the period 2010-2013.[4] The number of parties has also increased steadily over the same period. Figure 2.1 highlights an increase in the average number of parties in each decade, going from a low of 3.5 parties in the early post war years to the current high of 5 parties in the period 2010-2013.[5] The emerging trends summarized in Figure 2.1 highlight declining levels of turnout alongside an increase in the number of parties and declining levels of party polarization. While it is unclear if these three trends are interrelated, all three are trending in the expected direction, consistent with the turnout literature, and echo the popular perception a narrowing of the ideological spectrum. While both party polarization and number of parties have a decidedly mixed record of predicting turnout in existing studies, the general trends presented above suggest at least the possibility of an association between party systems and voter turnout.

3. Party Systems

Existing research on party systems and voter turnout have focused on party polarization and number of parties, with appropriate variables incorporated into models of voter turnout under the assumption that they operate independently from one another. However, while this assumption may

[4] Some measures of polarization have been constructed by taking the difference between the two most extreme parties standing while controlling for fringe parties by including a voter threshold (Crepaz, 1990), others have developed this further and weighted each party by vote share (Dalton, 2008), and yet others have calculated the standard deviation of the ideological position of parties standing in an election (Jansen, Evans, & Dirk de Graaf, 2012). The polarization score utilized is calculated by taking each party's ideology score from the Comparative Manifesto Project and weighting it by vote share, the standard deviation is then calculated to give an overall polarization score for each election. By weighting parties by vote share, small parties are controlled for that could potentially have an oversized effect upon the polarization score. Using the standard deviation allows for a more sophisticated indicator of polarization than simply calculating the difference between the 2 most extreme parties in an election.

[5] Gallagher's (2014) calculations that are based upon Laakso and Taagepera's (1979) effective number of parties measure is used throughout.

hold for models which include, for example, multiple institutional variables, for models with multiple party system variables this assumption may be more tenuous. The reason for this centers on the dynamic between the voter and the party system, put simply voters may be reacting to party systems as a whole rather than the degree of polarization or the number of parties independently.

Conceptually, it seems unlikely that variables such as polarization and number of parties operate independent from one another as they collectively structure the choices that voters confront at an election. Decisions on participation should be conceptualized as a response to the party system as a whole. To omit either variable would be to risk omitted variable bias, however, by failing to recognize the complexity of this relationship, misspecification is also likely. Furthermore, this approach is also consistent with a Downsian conception of party systems that recognizes the complex dynamic between party positioning and number of parties. This logic dictates that systems with two parties should realize keen competition for the median voter with parties naturally converging towards the center, while systems with many parties compete across the ideological spectrum present diverse choices to voters (Downs, 1957; Cox, 1990; Knutsen, 1998). In other words, a Downsian conception of party systems acknowledges a more dependent relationship between number of parties and polarization. Pioneering work by Sartori (1976) also underscores this complex and dependent relationship. In a similar fashion to Downs, Sartori suggested that centripetal party systems that converge on the center would compete for the median voter, whilst centrifugal party systems were more dispersed on the ideological continuum and often had the characteristics of multi-party systems.

To better conceptualize the relationship between number of parties and polarization, four distinct examples are discussed below. High levels of turnout would be expected to be found in party systems with both high levels of polarization and relatively few political parties. In these systems few

parties would mean that the prospect of coalition government would be low, while a high level of polarization would mean that voters confront more distinct choices as parties are located some distance from one another. In addition, the political stakes are relatively high as the prospect of an alternative party in power means the possibility of a sharp policy change. In short, these elections should be highly salient and turnout should be high.

Conversely, low levels of turnout would be expected in party systems with low levels of polarization and many political parties. In these systems, low levels of polarization would mean that voters confront fewer distinct choices as parties are located closer to one another. Furthermore, the political stakes are relatively low as there is little prospect of an alternative party in power with sharply divergent policy from that of the incumbent. In short, these elections should have little salience and turnout should be low.

Another possibility is a system with high levels of polarization and many parties for voters to choose from. Intuitively, one might expect that many ideological choices would equate to higher turnout. But in reality, voters may see less utility in voting as the possibility of a coalition government is high resulting in a government further from voter preferences. Party systems with these countervailing forces should produce only moderate turnout. Finally, a less polarized system with few political parties can also be considered. In these systems few political parties means that the prospect of coalition government would be low with resulting high turnout. However, even though single-party government is likely, the political stakes are low as there is little prospect of an alternative party in power with sharply divergent policy far away from a voter's preference. Much like our previous example, systems with these countervailing forces should result in only moderate turnout. To illustrate the systems

described above, Figure 2.2 represents a stylized depiction of how polarization and number of parties interact to predict turnout and provides an illustration of the substantive effects of this relationship.

By conceptualizing how polarization and number of parties interact, we can better predict how party systems may affect turnout. Examined in isolation, our understanding of the effects of polarization and number of parties on turnout is incomplete and risks misspecified models with poor explanatory power. However, by focusing on how polarization and number of parties interact to create party systems that voters respond to, the usefulness of these variables should increase and clearer relationships will be uncovered. To sum up, in what follows I test the following hypotheses:

Hypothesis 1*. Party systems with high levels of polarization and few parties will produce high levels of voter turnout.*

Hypothesis 2*. Party systems with low levels of polarization and many parties will produce low levels of voter turnout.*

4. Conceptualizing and Measuring Polarization

The notion that a more diverse party system would attract higher levels of voter participation has frequently been explored in the turnout literature. While results have been largely disappointing, the idea that citizens would respond positively to a more diverse set of parties seems a reasonable and intuitive hypothesis to make. Furthermore, there are several compelling theories that conceptualize such a relationship. Modernization theory, for example, suggests an instrumental orientation towards participation, that citizens will choose a form of participation that best suits the situation with voting only one of many forms of participation (Aarts & Wessels, 2005). The instrumental orientation suggests that turnout would only increase if individuals see benefits in voting over other forms of political

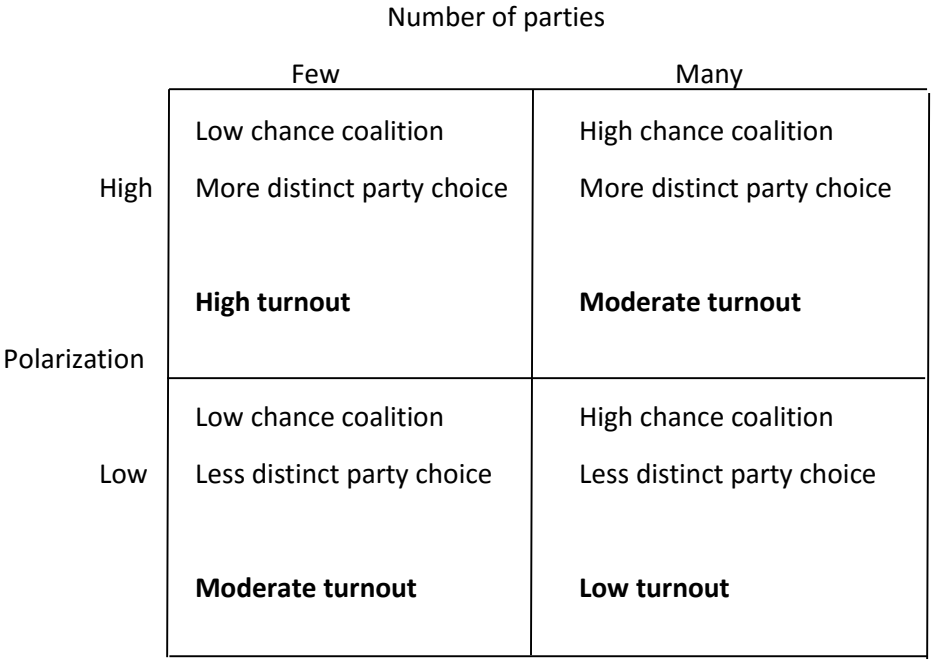

Figure 2.2. Interaction of polarization and number of parties.

participation. A simple cost-benefit calculation may well lead individuals to opt-out of voting. While many voters will vote out of civic duty or strong party affiliation (Downs, 1957), others may only participate if there is meaningful choice between parties (Van der Eijk & Franklin, 1996).

Taking an instrumental orientation allows for an explanation of turnout that recognizes the importance of party systems. The variety of choices, or diversity, of party systems may be an important determinant of political participation. There is an intuitiveness to the notion that greater diversity in parties may spur turnout, with evidence that turnout decreases with the absence of realistic party choices in elections (Campbell et al., 1960). There is also evidence that individuals can differentiate between parties on the left-right dimension and that this differentiation acts as a useful tool in deciding how individuals should cast their votes (Oppenhuis, 1995; van der Eijk & Franklin, 1996). Combined, it is easy to imagine how individuals may opt-out of voting and pursue alternative forms of political participation if there is little prospect of policy change in an election. Elections with distinct and numerous choices would spur greater participation, as individuals would easily be able to determine that voting would be a beneficial form of political participation. Conversely, elections with not dissimilar choices would lead to cost-benefit calculations that would lead to individuals opting-out of voting.

Conceptualizing and subsequently creating an overall polarization score for an election is a more demanding task than calculating the number of parties. Conceptually, an appropriate measure of polarization needs to capture not only the ideological positions of the parties, but also how dispersed the parties are in the system. It is, perhaps, then not unsurprising that only a handful of studies have focused on polarization as a key independent variable. Intuitively however, a well-crafted measure of polarization is a potentially interesting indicator of voter choice as it can capture the diversity of choices available to voters.

To capture polarization, an appropriate conception of the 'spread' of the choices available to the voter needs to be appraised. Most measures of polarization have been constructed by taking the difference between the ideological positions of the two most extreme parties standing in an election, while also omitting parties under an arbitrary vote threshold of say 1, 5, or 10 percent (Crepaz, 1990; Siaroff & Merer, 2002). Others have calculated polarization as a function of a party's mean ideology score weighted by party vote share (Dalton, 2008). For the purpose of this paper, an approach similar to Jansen, Evans, and Dirk de Graaf (2012) will be utilized. The above authors' measure of polarization was largely based on the standard deviation of party ideology scores. This paper differs from the above in that the standard deviation will be weighted by party size in a similar fashion to Kim, Powell, and Fording (2010).[6] The advantage of such an approach is that it not only captures the spread of party choices in an election, but also controls for party-size without resorting to arbitrary cut-off points that may not be appropriate for all party systems.

While there are different measures of ideology available to measure polarization, the data utilized for this paper will come from content analysis of party manifesto data from the Comparative Manifesto Project (CMP) database. Although there has been much discussion about the validity and appropriateness of each approach to measure ideology (Budge, 2000; Kleinnijnhuis & Pennings, 2001; Mair, 2001; McDonald et al., 2007; Volkens, 2007; Dinas & Gemenis, 2010), the use of manifesto data was chosen as it allows for comparison over a prolonged period of time and is known to generate the smallest errors when predicting party ideology placements (Gable & Huber, 2000).

[6] Measures of polarization have also been constructed to explore how polarization may be associated with legislative distortion. Kim, Powell, and Fording (2010) investigated this relationship and utilized CMP data to construct a measure of polarization which was once again calculated by utilizing the standard deviation. The authors found a positive relationship between legislative distortion and polarization, a fairly intuitive finding that highlights distortions between legislatures and voters.

5. Model and Variables

The argument presented in the preceding section proposes that the effects that party systems have on turnout can be best understood by examining how number of parties and polarization interact. The functional form of the model I propose is as follows:

$$\text{TURNOUT} = a + b_1\text{PARTIES} + b_2\text{POLARIZATION} + b_3\text{PARTIES X POLARIZATION} + b_4\text{POPULATION} + b_5\text{PR} + b_6\text{WEEKEND} + b_7\text{FOUNDING} + b_8\text{COMPULSORY} + b_9\text{UNICAMERALISM} + b_{10}\text{CLOSENESS} + e$$

Turnout, the dependent variable, is the percentage of registered voters who cast a vote in an election. There are two main approaches to measuring voter turnout--measuring it as a percentage of the voting age population, or measuring it as the percentage of those registered to vote. Benny Geys (2006) calculates that in the extant literature percentage of voting age population is used around 47 percent of the time and percentage of registered voters is used roughly 30 percent of the time. Well-known authors such as Jackman (1987) and Lijhpart (1997) chose the former, while Franklin (1999) and Blais and Dobrzynska (1998) chose the latter. While objections to both approaches have been cited, I will use registered voters for two reasons. First, Blais and Dobrzynska (1998) amongst others have suggested that by using population as a measure, those not eligible to vote, such as varying alien populations or those not legally allowed to vote due to criminal convictions, will under estimate turnout rates. Second, countries with very low registration rates, such as those in the US, will appear artificially low. In short, underestimation of turnout is a problem when utilizing turnout as a percentage of the eligible population. Data for TURNOUT was obtained from the widely utilized International Institute for Democracy and Electoral Assistance (IDEA).

The key independent variables are *Parties* and *Polarization*. The variable *Parties*, is the number of parties standing in an election. While some have calculated this simply as the number of parties on offer over an arbitrary cut-off point of say 3 per cent or 5 per cent of the vote (Gray & Caul, 2000; Kostadinova, 2003), I have instead chosen to use Gallagher's (2014) calculations that are based upon Laakso and Taagepera's (1979) effective number of parties measure. Laakso and Taagepera's (1979) measure has long been the accepted measure for number of parties (see the appendix for details of data sources), and is most suitable for this analysis as it allows differentiation between less relevant parties that voters may not recognize as viable and between larger more viable parties. *Polarization* represents the 'spread' of the parties across an ideological spectrum, or how polarized a party system appears to voters. While the number of parties has been routinely examined in relation to turnout, polarization has only been briefly mentioned in a handful of studies, with the difficulty of constructing such a measure, perhaps, limiting its usefulness. For this paper, the polarization score of each election will be constructed by calculating the standard deviation of the party ideology scores from the CMP. To minimize the potential effect of small parties on the fringes skewing this measure, parties that achieve less than 1 per cent of the vote are not considered and the remaining parties weighted by vote share. Finally, the variable is transformed with the natural log taken to transform the polarization score into a more normal shape as this variable was heavily skewed to the right.[7] This measure captures the spread of the parties across the system and also controls for potential outliers that may skew the results. Two further measures of polarization also used in the literature are also considered. *Polarization2* is simply

[7] After weighting POLARIZATION by vote share the predictor variable was no longer normally distributed potentially causing non-normally distributed residuals. After conducting qnorm, pnorm, ladder, and gladder tests in Stata, the log transformation clearly showed it would help to make the variable more normally distributed. Our second predictor variable PARTIES, and our dependent variable TURNOUT were approximately normally distributed.

the standard deviation of the party ideology scores from the CMP without any weighting by vote share, while *Polarization 3* is the difference in ideology scores form the CMP between the party furthest to the left and the furthest to the right. Both of these additional measures exclude parties that achieve less than 1 per cent of the vote. The dynamic component of the proposed model is the interaction term *Parties x Polarization*. As already indicated above, this variable allows for modelling of party systems by combining the two important component parts in conjunction. Descriptive statistics of the dependent variable, key independent variables and control variables are presented in Table B1 in the Appendix. Commonly used control variables are also included. The variable *Population* is the population (in millions) of each country at the time of the election. Countries with smaller populations might be expected to have higher levels of turnout than larger countries due to greater social cohesion and homogeneity that facilitate a greater sense of civic engagement (Hoffman-Martinot, 1994). Others have used a rational choice argument, suggesting that the smaller the size of the country, the greater the probability that a few votes might make a difference in an election (Blais, 2000; Geys, 2006). *PR* is a dummy variable that stands for proportional election system. Existing research suggests that countries with PR and/or larger districts do increase turnout (Jackman, 1987; Blais & Carty, 1990; Jackman & Miller, 1995; Franklin, 1996; Radcliff & Davis, 2000). PR is coded as 1 when all are seats are allocated through PR and 0 in all other types of electoral systems. A strong positive relationship is expected. *Weekend* is a dummy variable with 1 indicating an election taking place on the weekend, and 0 indicating an election that takes place on during the traditional working week. While Franklin (1996) found higher turnout when elections take place on a Sunday, others like Norris (2002) found no effect. The variable *Founding* indicates if an election has taken place for the first time in a newly democratic country. According to O'Donnell and Schmitter (1986) higher levels of turnout can be expected due to

the excitement that such a new and novel experience provides. *Founding* is a dummy variable with 1 representing the first election in a newly democratic country and 0 indicating any other election. *Compulsory* is another dummy variable with 1 indicating compulsory voting rules and 0 indicating a country that does not require voting. Although some countries largely fail to enforce compulsory voting, such as Greece for example, in general any compulsion to vote should have a positive effect upon turnout (Mackerras, 1999). The variable *Closeness* represents how competitive an election will be. In a similar fashion to the population variable, it has been suggested that close elections spur participation as the closer the more competitive the election, the greater the probability becomes that one single vote could make a difference (Blais, 2000; Geys, 2006). Finally, *Unicameralism* is a dummy variable with 1 representing a country with a single elected chamber and 0 indicating a country with a bicameral system. The prediction is that a country with an elected upper house reduces the decisiveness of an election, as it represents a further potential hurdle to policy change (Jackman, 1987).[8]

6. Results

6.1. Descriptive Statistics

The estimation below is based on data for 433 elections across 26 OECD countries. In recalling our hypothesis, it is expected that systems with few parties and high levels of polarization will exhibit higher levels of turnout, while systems with many parties and low levels of polarization exhibit lower levels of turnout. To test our hypothesis, some simple descriptive statistics are examined and presented

[8] The variable *unemployment rate* which captured the unemployment rate was also considered as a control but ultimately abandoned due to collinearity with the variable *unicameralism*. I chose to drop the unemployment variable for a couple of reasons. Firstly, there is a clearer theoretical expectation of a relationship between turnout and *unicameralism* predicted in the literature, while *unemployment* has an inconsistent track record of predicting turnout at the country level. Secondly, in all 3 models below *unicameralism* performs well showing statistical significance, while *unemployment* failed to find significance in any model.

in Figure 2.3. Figure 2.3 restates our hypothesized expectations for turnout at different levels of polarization and number of parties and also includes turnout results from our sample of countries. As expected, we find that turnout in the top left quadrant, which only includes elections with few parties (under 2.5 parties) and high levels of polarization (above the mean of 5.97), is highest at over 85 percent, confirming Hypothesis #1. Conversely, turnout is lowest in the bottom-right quadrant, a quadrant that only includes elections with low levels of polarization and many parties. Turnout in this quadrant is only about 78 percent, confirming Hypothesis #2. Table 2.1 shows that the two remaining quadrants contain levels of turnout close to the overall mean of 80.3 percent. While the difference between these two quadrants seems modest, being as it is only a 7.3 percent difference in vote share, this represents a not inconsiderable two-thirds of a standard deviation difference in voter turnout.

Difference of means tests support the hypothesis that the effect of number of parties on turnout is conditional upon polarization. In order to test our hypothesis that there is statistical significance between these quadrants, one-sample Student's *t*-test are performed. These are used to test the hypothesis that the mean turnout of both the upper-left quadrant and lower-right quadrants are statistically different from the remaining three quadrants, respectively. The hypothesized highest turnout in the upper-left quadrant (high polarization, few parties) is 85.3 per cent, while the mean turnout for the remaining three quadrants is 79.9 (SD 11.4, N = 400), which is statistically different from the hypothesized value of 85.3, t (399) = -9.54, p = 0.00. A 95 percent confidence interval on the mean turnout using a Student's t distribution with 399 degrees of freedom is (78.7, 81.0). Since this interval does not contain 85.3, there is defensible evidence that the mean turnout is different from 85.3. The hypothesized lowest turnout in the lower-right quadrant (low polarization, many parties) is 78.0 per cent, while the mean turnout for the remaining quadrants is 83.0. (SD 10.2, N = 195). This is statistically

Polarization	Number of parties: Few (under 2.5)	Number of parties: Many *(over 2.5)*
High *(above mean of 5.97)*	Low chance coalition Distinct party choices **85.3% (34)**	High chance coalition Distinct party choices **82.8% (154)**
Low *(below mean of 5.97)*	Low chance coalition Indistinct party choices **83.0% (7)**	High chance coalition Indistinct party choices **78.0% (239)**

Figure 2.3: Actual Interaction of Polarization and Number of Parties on Turnout 1945 to 2013.

Note: Percentages are averages across all dates and countries

different from the hypothesized value of 78.0, *t* (194) = 7.03, p = 0.00. A 95 percent confidence interval on the mean turnout using a Student's *t* distribution with 194 degrees of freedom is (81.7, 84.6). Since this interval does not contain 78.0, there is defensible evidence that the mean turnout is different from 78.0. While only descriptive in nature, these tests highlight substantive statistical differences in turnout between our two quadrants of interest and tangibly support Hypothesis #1 and Hypothesis #2.

6.2. Regression Results

While these descriptive analyses provide simple statistical evidence that the number of parties' effect upon turnout is conditional upon polarization, multiplicative interaction models with fixed effects for countries and years, and robust standard errors are estimated and presented in Table 2.1.[9] Model 2.1 includes the raw polarization measure before it was normalized. While the effect is weak, the untransformed polarization measure is significant and positively associated with turnout. Note that without the interaction term number of parties is insignificant in this model, highlighting the poor explanatory power of this variable without the interaction and being broadly in-line with the literature. The controls in Model 2.1 also behave as expected. The size of the population is significant and negatively associated with turnout, while institutional indicators including proportional representation, compulsory voting and unicameralism are all significant and positively associated with turnout. Finally, having a founding election is also significant and positively associated with turnout. Model 2.2 includes replaces the raw polarization variable the transformed polarization score. As expected, polarization

[9] A fixed effects model was chosen to run the regression. While man pointed to the merits of a random effects model especially with regard to their generalizability and extendibility (see for example Beck and Katz, 2007; Bell and Jones, 2015) and a Hausman test showed a preference for such a model (see Green, 2008), a fixed effects model was eventually chosen. The reasons for this are twofold. Firstly, the fixed effects model is widely regarded as more appropriate for the type of analysis undertaken above. Secondly, coefficients are usually smaller in a fixed effects model and so the "bar is higher" for significance. So, in an abundance of caution a fixed effects model is reported. As expected, the random effects model showed higher levels of significance.

Table 2.1: Polarization, Number of Parties, and Turnout (1945-2013)

Dep. Var.: Voter turnout	*Model 2.1 Estimates (S.E.)*	*Model 2.2 Estimates (S.E.)*	*Model 2.3 Estimates (S.E.)*
Polarization (raw)	0.004***		
	(0.001)		
Polarization (log)		2.031***	4.893***
		(0.596)	(1.472)
Parties	-0.808	-0.735	3.437*
	(0.572)	(0.608)	(1.853)
Parties*polarization			-0.782**
			(0.355)
Population	-0.237***	-2.413***	-0.237***
	(0.060)	(0.062)	(0.060)
PR	8.313***	8.225***	8.419***
	(0.718)	(0.738)	(0.700)
Weekend	-2.325	-2.493	-2.484
	(4.059)	(4.124)	4.162
Founding	7.601*	7.742*	8.029*
	(4.296)	(4.156)	(4.058)
Compulsory	12.684***	12.769***	12.589***
	(2.362)	(2.273)	(2.348)
Unicameralism	2.181***	2.182***	2.367***
	(0.468)	(0.493)	(0.434)
Closeness	-0.059	-0.057	-0.058
	(0.059)	(0.060)	(0.058)
Constant	81.708***	71.449***	55.772***
	(4.017)	0.060	(8.190)
N	431	431	431
Within r-squared	0.38	0.37	0.38
Prob > chi2	0.000	0.000	0.000

Note: Multiplicative interaction models with fixed effects for countries and years, robust standard errors in parentheses.
Sign.: *p ≤ 0.10; **p ≤ 0.05; ***p ≤ 0.01.

remains significant and in the expected direction. As high levels of polarization are always predicted to have a positive effect upon turnout, with number of parties only mitigating this effect when the number of parties increases to high levels, the consistently positive and statistically significant coefficient across Model 2.1 and Model 2.2 confirms our hypothesis. Number of parties remains insignificant in Model 2.2. Recall, that while some researchers have found a negative effect on turnout, others failed to find any relationship. In sum, the unremarkable and weakly significant relationship on turnout for number of parties is consistent with much of the literature. Model 2.3 includes the interaction term between polarization and number of parties. The interaction is significant and negatively associated with turnout, polarization remains significant and positively associated with turnout, and number of parties becomes significant and changes direction to be positively associated with turnout. While a positive relationship is unusually being that much of the literature reports a negative or null relationship with turnout, as Figures 2.2 and 2.3 highlighted, an election with high levels of polarization and many parties would realize moderate levels of turnout. Finally, the one unusual finding is the variable for unicameralism which, whilst in the expected direction, is highly significant. However, the strength of this association may be due to utilizing a fixed effects model, as in the unreported random effects model, unicameralism showed no significance.

Turning to the interaction term, the coefficient on *Polarization*Parties* is negative indicating that the positive effect declines as the number of parties increase. As this is substantively meaningless since there are no cases of democratic elections with zero political parties, the impact of polarization is then estimated with the number of political parties at a level greater than zero and presented in Figure 2.4. The sloping line highlights how the marginal effect of polarization changes with the number of parties, and illustrates the conditions under which polarization has a statistically significant effect upon number

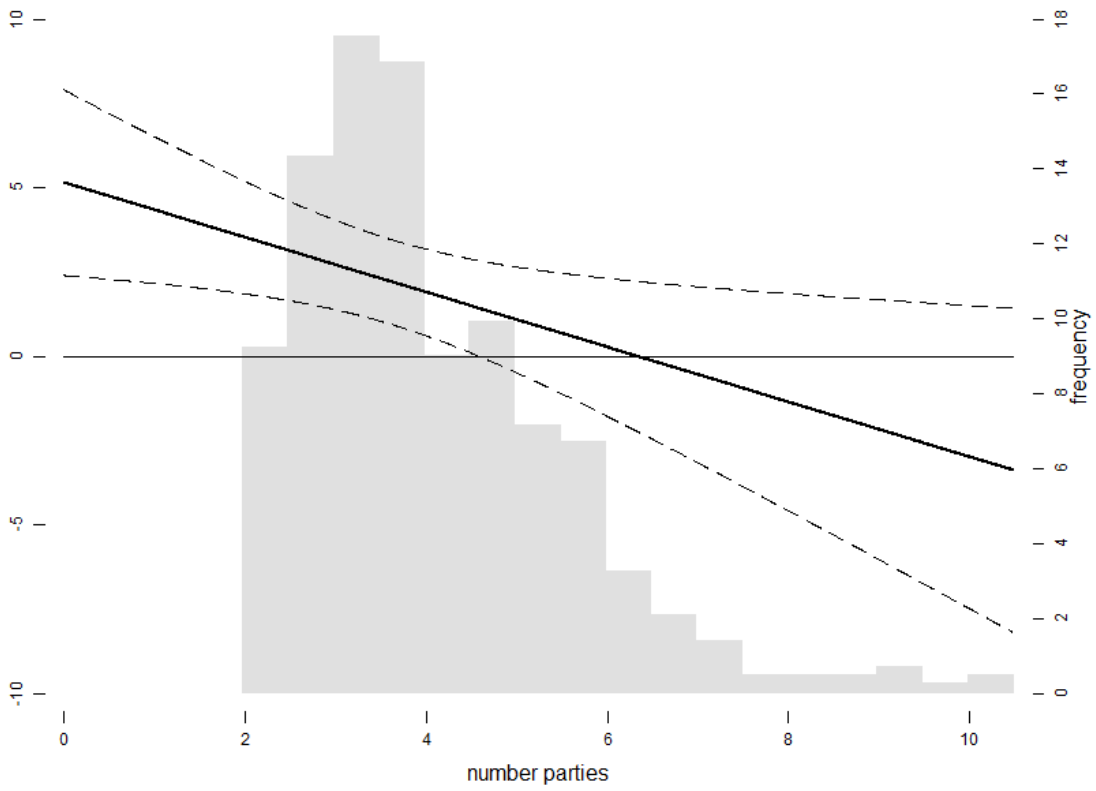

Figure 2.4: Marginal effect of polarization on number of parties.

of parties. It is clear from Figure 2.4 that polarization has a positive effect upon turnout when there are few parties. This positive effect declines as the number of parties increases. When there are more than four parties, polarization no longer has an impact upon turnout. When examining which elections contain four or fewer number of parties, 246 out of our sample of 433 (roughly 57 per cent) fall within the sample of significance. It is easy to imagine how in systems with four or more parties, polarization would have no meaningful effect upon turnout. As the number of parties increases past four, the probability of coalition government becomes ever greater and thus saliency diminishes. Or to put it another way, party polarization becomes less relevant as consensus politics becomes the norm. In systems with fewer than four parties, levels of polarization become far more important. Consequently, turnout should be high, as there would be a lower chance of coalition government and the potential for a costly reversal and government far away from an individual's preferences.

As it is possible for the interaction term to be insignificant and the marginal effects to be significant in certain relevant values of the modifying variable, following (Brambor et al., 2005) the marginal effects of the number of parties on polarization should also be examined. The sloping line in Figure 2.5 indicates how the marginal effect of number of parties changes with polarization, and illustrates the conditions under which number of parties has a statistically significant effect upon polarization. Figure 2.5 highlights that number of parties has a negative effect upon turnout when polarization is high, and this effect declines as polarization decreases. When the polarization score is less than six, number of parties no longer has an impact upon turnout. When examining the number of elections that have polarization scores of six or higher, 206 out of our sample of 433 (roughly 48 per cent) fall within the sample of significance. Again, it is easy to imagine how the number of parties would have little effect upon turnout when polarization levels are low. Systems with low levels of polarization

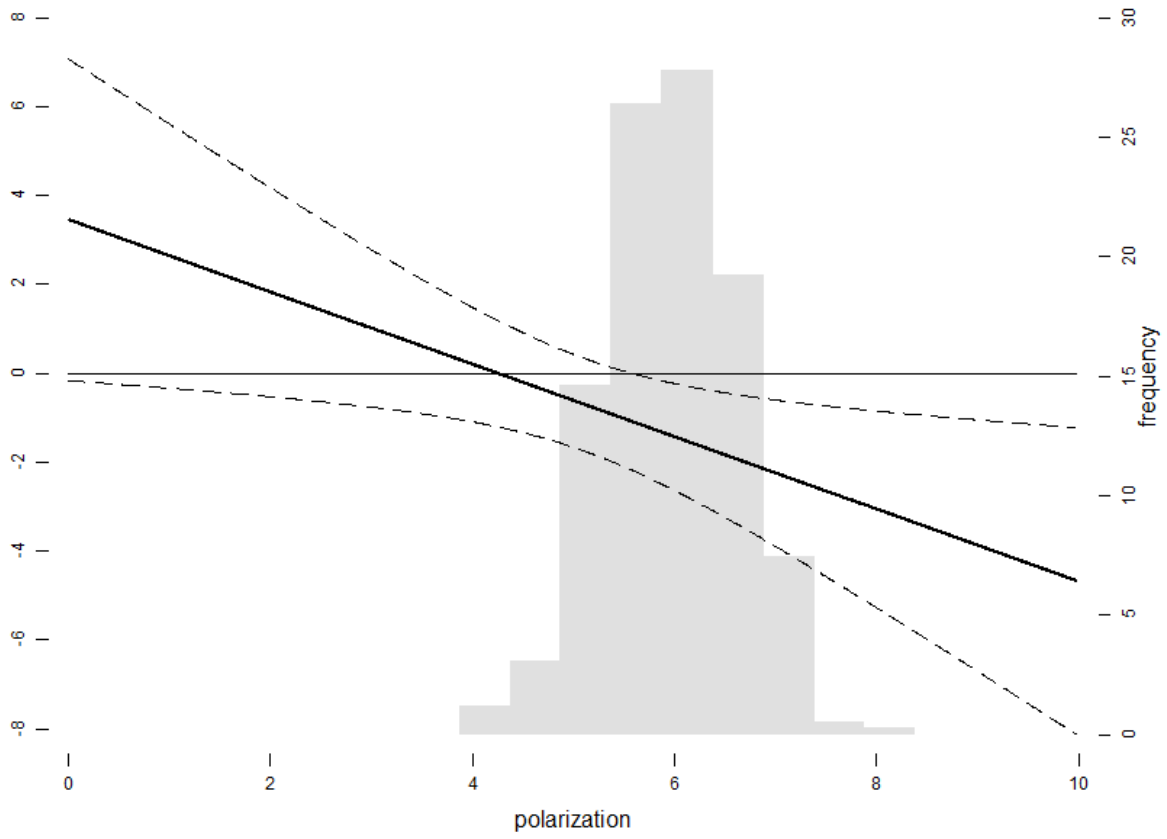

Figure 2.5: Marginal effect of number of parties on polarization.

are unlikely to result in high voter turnout. The number of parties in such a system simply makes little difference, as ultimately, there is little to choose between the parties as they all inhabit a narrow ideological spectrum. The number of parties only begins to have an effect upon turnout when polarization levels are high as this can meaningfully affect the composition of government. In short, the attractiveness of highly polarized systems can easily be compromised by the number of parties in the system.

7. Conclusion

Although previous attempts at identifying the determinants of voter turnout at the party system level have attained only modest success, there is good reason to believe that party system factors such as polarization and number of parties have measurable effects upon turnout. The results presented in this chapter confirm that party systems can meaningfully affect turnout. Voters do not simply respond to the number of parties or levels of polarization. Instead, the composition of the party system as a whole is a key determinant of a voter's propensity to vote. A highly polarized party system with few parties spurs individuals to vote, while a system with low levels of polarization and many parties reduces incentives to vote. Party systems that do not represent either of these extremes fail to affect turnout levels to any meaningful extent.

The preceding analysis also helps us better piece together the puzzle of declining voter turnout. Much of the debate on how party systems affect turnout has centered on the number of parties, with patchy results reducing the usefulness of this variable. A primary contribution of this paper is to resolve much of the confusion surrounding number of parties' expected effect upon turnout, by clearly illustrating under which conditions number of parties can depress turnout. In short, number of parties

only has a negative effect upon turnout when polarization levels are high. Without understanding how polarization and number of parties interact, the effect that party systems have on turnout is only partially understood. Not only are these conditions explored theoretically, they are also examined and illustrated empirically.

Finally, recent declines in turnout have not been particularly well predicted with many existing predictors of turnout. While differences in turnout between countries can often be explained by examining institutional predictors such as the type of electoral system or compulsory voting, these often fails to explain the long-term decline in turnout experienced within countries. The long-term decline in turnout reported in recent decades broadly follows the findings in this analysis of declining levels of polarization and increased numbers of parties within and across countries.

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Appendix

Table B1: Descriptive Statistics

Variable	Mean	SD	Min	Max
Turnout	79.83	11.77	41.68	97.60
Parties	4.10	1.46	1.99	10.28
Polarization (log)	5.97	0.64	3.89	7.93
Parties*Polarization	23.90	7.33	11.60	52.53
Population	29.51	48.30	0.14	315.00
Proportional representation	0.61	0.49	0	1
Unicameralism	0.38	0.49	0	1
Weekend voting	0.68	0.47	0	1
Closeness	9.76	8.12	0.01	40.03
Founding election	0.01	0.10	0	1
Compulsory voting	0.24	0.43	0	1

Measures and Coding: Country-Level Data

Turnout: Valid voter turnout: percentage registered voters casting valid votes in national legislative elections. Source: International Institute for Democracy and Electoral Assistance (ID).

Parties: The effective number of parties at the electoral level. Source: Gallagher, 2014 (www.tcd.ie/Political_Science/staff/michael_gallagher/ElSystems/index.php, accessed Jan 2015.)

Polarization: Standard deviation for all parties that receive at least one per cent of the votes in each national election, weighted by vote share. Source: Comparative Manifesto Project.

Population: Estimated population size in millions. Source: The World Bank (www.worldbank.org).

Proportional representation: A (0,1) dummy variable that takes the value of 1 if a country has list PR.

Unicameralism: A (0,1) dummy variable that takes the value of 1 if a country has a unicameral system.

Weekend voting: Elections held on Sunday (1), other day off the week (0). Source: Klaus Armingeon, Laura Knöpfel, David Weisstanner and Sarah Engler. 2014. *Comparative Political Data Set I 1960-2012.* Bern: Institute of Political Science, University of Berne.

Closeness of the election: Difference between the vote shares of the two largest parties. Source: International Institute for Democracy and Electoral Assistance (IDEA; www.idea.int).

Founding: A country's first democratic election (1), other (0). Source: International Institute for Democracy and Electoral Assistance (IDEA; www.idea.int).

Compulsory voting: Compulsory voting laws (1), other (0). Source: International Institute for Democracy and Electoral Assistance (IDEA; www.idea.int).

CHAPTER III: TURNOUT, PARTY SYSTEM DIVERSITY AND LEFT-OF-CENTER PARTIES: EXPLAINING TURNOUT THROUGH THE STRENGTH OF LEFT-OF-CENTER PARTIES.

Abstract

In the last 50 or so years, observers have noted with concern declining rates of voter turnout in many democracies. There has also been a perceived narrowing of ideological diversity in many party systems, with, in particular, many parties on the left moving towards the center. However, extant literature on turnout and party systems has realized only mixed and often contrary results. By replacing poorly performing aggregate measures of polarization and number of parties with a novel measure of left party strength, a consistent association with turnout is uncovered alongside clearer conceptualization of how ideological diversity affects turnout. Multiplicative interaction models with fixed effects for countries and years are utilized across 26 democracies at both the individual and country-level. My findings show that measures of party systems that capture left party strength have a significant and substantial positive association with voter turnout outperforming more commonly used aggregate measures of party systems.

1.Introduction

In the last 50 or so years, observers have noted with concern declining rates of voter turnout in many democracies. In the same period there has also been a perceived narrowing of ideological diversity in party systems with, in particular, many parties on the left moving towards the center (Moschonas, 2011). Combined, these factors have caused some to speculate on a potential relationship between low levels of turnout and a lack of ideological diversity in party systems (Crepaz, 1990; Dalton, 2008). The literature has presented theoretical expectations that this narrowing of the political spectrum should have a detrimental effect upon turnout. However, these expectations have been weakened by conflicting and at times confusing empirical findings. On the one hand, it seems intuitive and

theoretically appealing that a more ideologically diverse party system would spur participation (Campbell et al., 1960; Van der Eijk & Franklin, 1996). On the other hand, studies have found only mixed support for this hypothesis, with spotty evidence that more polarized systems are associated with higher turnout and a puzzling negative relationship reported between turnout and number of parties. The approach of many studies has been to operationalize measures of party systems at the aggregate level, constructing variables of polarization or number of parties that measure party systems from left to right. However, this approach overlooks the fact that left-leaning individuals relatively less consistently in voting and are therefore potentially more sensitive to changes in party systems. This paper proposes that any increase in ideological diversity on the left would have the potential to increase turnout more than similar increases on the right, due to the more consistent and persistent participation of voters on the right. Instead of utilizing general measures of ideological diversity to predict turnout, a measure that captures the ideological diversity of left parties would better capture where variation is predicted to occur.

Using data from 369 elections in 26 countries over a span of 65 years, the impact of party systems on turnout is explored.[10] By replacing poorly performing aggregate measures of party systems with a novel measure of left party strength, I uncover a consistent association between party diversity and turnout, and offer a clearer conceptualization of how these two variable are related. Analysis is conducted at both the individual and country level, with measures of left party strength based on public

[10] The cases chosen are, by and large, determined by the availability of data. The following countries are included in the estimation: Australia, Austria, Belgium, Canada, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, New Zealand, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom, and the United States. The 1951 election in Luxembourg was not a national election but was held only in the North and Centre constituencies and the elections in the South and East constituencies were held in 1948 (Mackie and Rose 1991). With this in mind, turnout levels were combined for these years.

perceptions of parties from the Comparative Study of Electoral Systems (CSES) and from party manifestos from the Comparative Manifesto Project (CMP). Results show that measures of party systems that capture the ideological strength of left parties have a significant and substantial positive association with voter turnout outperforming more commonly used aggregate measures of party systems.

This chapter is organized into several sections focusing on the meaning and measurement of diversity in party systems. I begin by discussing the concept of ideological diversity in party systems and why it is theoretically important to include a measure of party ideological diversity in models of voter turnout. Next, I discuss existing conceptualizations of ideological diversity in party systems and how these measures have largely failed to establish party system diversity as a key independent variable in models of turnout. Most importantly, I introduce a new conception and subsequent measurement of ideological diversity based on a measure of left party strength and go onto demonstrate how this measure is positively associated with turnout. Finally, I discuss the implications that these results hold for models of voter turnout in contemporary party systems.

2. Conceptualizing Diversity in Party Systems

There are many ideas about which factors are the main predictors of voter turnout. Popular explanations often focus on institutional predictors such as the type of electoral system, the existence of weekend and holiday voting, and compulsory voting rules (Blais & Carty, 1990; Franklin, 2006). Other explanations have focused on party systems and how a lack of choice or ideological diversity in party systems may be responsible for declining levels of turnout (Crepaz, 1990; Abramowitz and Saunders 2005; Dalton, 2008; Dodson, 2010; Rogowski 2014). In many respects, party system explanations are

especially attractive, as there has also been a widespread perception of a narrowing of many party systems in recent decades (Moschonas, 2011). Furthermore, the ideological diversity of party systems is a potentially attractive predictor, as it connects the voter with parties in an explanation of turnout. Intuitively, it would seem odd to separate the act of voting from the parties competing in an election; after all, some appraisal of the parties on offer is presumably made before a voter visits the polling booth.

The notion that a more ideologically diverse party system would spur turnout is based upon a conceptualization of party systems in spatial terms. Anthony Downs (1957) expressed this concept by proposing that party systems could be perceived in spatial terms. Parties occupy the space across a Left-Right continuum and move across this space in response to both party competition and voter preferences. An important implication of this model is that a voter may decide to abstain from voting if a party is far from his/her ideological preference. Downs' work provides a useful framework for conceptualizing how parties move across a one dimensional ideological continuum, and also how voters' own placement on this continuum may affect their propensity to engage in voting. Other scholars have developed this further with clear conceptualizations as to how a more ideologically diverse party system might lead to higher levels of turnout. Modernization theory, for example, suggests an instrumental orientation towards participation--that citizens will choose a form of participation that best suits the situation, with voting only one of many forms of participation (Aarts and Wessels in Thomassen (ed.), 2005). The instrumental orientation argument suggests that turnout would only increase if individuals see benefits in voting over other forms of political participation. Put simply, a cost-benefit calculation may well lead individuals to opt-out of voting. While it is conceded that many voters will vote out of civic

duty or strong party affiliation (Downs, 1957), others may only participate if there is meaningful choice between parties (Van der Eijk and Franklin, 1996).

Taking an instrumental orientation allows for an explanation of turnout that recognizes the importance of party systems. The variety of choices (or ideological diversity) in a party system may be an important determinant of political participation (Campbell et al., 1960). There is also evidence that individuals can differentiate between parties on the left-right dimension and this differentiation acts as a useful tool in deciding how to vote (Oppenhuis 1995; van der Eijk and Franklin 1996). Combined, it is easy to imagine how individuals may opt-out of voting altogether if there is little prospect of policy change in an election. Conversely, elections with more diverse and numerous choices would presumably spur greater participation, as individuals should be able determine that voting would be a beneficial form of political participation.

Other explanations of how a more ideologically diverse party system would attract higher levels of turnout center on the notion of polarization. There are several explanations for this relationship. Firstly, and most obviously, the ideological spread of a party system should affect the range of choices available to the voter and the voter's proximity to a favored party. Political participation is linked to stimuli, and the greater the number and range of parties in a political system, the greater the opportunity for a prospective voter to find a party that is close to her ideological preference (Milbrath and Goel, 1977). A further explanation adds a socio-psychological explanation of voting behavior, which views voting as an opportunity for individuals to express their political views. A wide political spectrum stimulates individuals to vote because there is more opportunity for self-expression than in a less diverse party system. Finally, highly polarized systems also increase the incentive to vote since there is the likelihood of large variation in potential outcomes. Individuals in countries with highly polarized

political systems face the possibility of unfavorable policies enacted by a government far from a voter's preferences, as there is large variation in potential electoral outcome. Conversely, individuals in countries with not dissimilar parties have less to fear from their most favored party losing an election (Ordeshook, 1986).

3. Existing Measures of Party Systems

While the notion that individuals would respond positively to a more diverse set of parties seems a reasonable and intuitive claim, the creation of an appropriate measure of party system diversity has been challenging. Calculating the number of parties competing in an election has long been the most popular indirect method utilized. Intuitively, a positive relationship between number of parties and turnout should be expected, as the more parties competing, the higher the probability that a voter will find a party that closely matches her preferences. Higher turnout should result from this presumably more ideologically diverse party system, as there would presumably be fewer voters that failed to find a suitable party. However, empirical results have shown most frequently either a negative relationship (Jackman, 1987; Blais and Carty 1990; Jackman and Miller 1995; Blais and Dobrzynaska 1998, Radcliff and Davis 2000, Kostadinova 2003), or no relationship between diversity of party system and turnout (Perez-Linan, 2001; Fornos et al., 2004). The theoretical explanation for this, admittedly odd, relationship centers on explanations that highlight how systems with many parties are likely to result in coalition governments and elected representation further away from voter preferences (Jackman, 1987; Blais and Carty, 1990; De Winter et al., 1991). In short, in systems with many parties, voters do not directly select the government that will represent them in the legislature. Instead, voters choose parties that then choose partners to form a government (Downs, 1957). This disconnect makes multiparty

elections less important to voters, which results in lower levels of turnout. However, empirical research has failed to support this, with little evidence showing higher levels of turnout in elections that result in single-party governments (Blais and Carty 1990; Blais and Dobrzynska 1998). In short, existing explanations for this negative association are not particularly persuasive and are not consistent with theoretical expectations.

An alternative to number of parties--party polarization--has recently been explored as a measure of ideological diversity in party systems. Polarization is attractive because it addresses the counterintuitive results associated with number of parties and turnout by suggesting that it is in fact the 'range' (rather than the number) of choices that matter to voters. Theories of polarization highlight how centrifugal party systems which exhibit a large degree of ideological differentiation between major parties should realize high levels of turnout, while centripetal party systems which converge to the median voter have fewer ideological choices and are less thus appealing to prospective voters. Polarization has, however, only shown modest success as an explanation for voter turnout, with only a handful of studies examining polarization as a key independent variable. Crepaz (1990) constructed a measure of polarization by calculating the space between the two most extreme parties in an election. Utilizing Castle and Mair's expert survey of party positions, a positive association between polarization and turnout was uncovered. However, it is unclear if smaller parties on the extremes were controlled for, potentially skewing his measure of polarization. A different approach was utilized by Dalton (2008), who employed survey data to construct an individual level measure of polarization. In an effort to control for small parties, the standard deviation of party polarization scores were calculated and utilized as a novel measure of polarization. While such an approach attempts to capture the 'range' of choices and has been popular in American politics (see for example Abramowitz & Saunders 2005; Dodson

2010), the use of individual level data to calculate polarization makes historical cross-national comparison far from easy. Both Siaroff and Merer (2002) and Franklin (2004) utilized variations of these measurements to include polarization as control variables. While Siaroff and Merer (2002) did find a positive relationship, Franklin (2004) found no such relationship.

In the end, both polarization and number of parties seem intuitive and appropriate ways to operationalize the concept of ideological diversity in party systems. However, spotty results on polarization, alongside many studies uncovering a negative relationship between number of parties and turnout, have diminished the usefulness of party systems as an indicator of turnout. In short, results thus far somewhat weaken the party system thesis. However, in what follows I will argue that party systems do affect turnout, and that these effects can be captured with modifications to current measures and more robust theoretical operationalizing of this concept. Instead of abandoning the party system thesis altogether, a more nuanced indicator of ideological diversity is presented that captures how voters on the right and, in particular, voters on the left, respond to ideological diversity in party systems.

4. Reappraising Party System Diversity

Efforts to find a link between the nature of party systems and turnout have largely treated key independent variables as having predictable and uniform effects upon an individuals' propensity to vote. Turnout is expected to be positively associated with more ideologically diverse party systems, with little regard to where diversity increases. However, these relationships have proved largely elusive in the extant literature. I propose that this lack of association is due to aggregate measures failing to account for the different ways that voters on the left and the right respond to changes in party systems.

Inherent in many existing models is the assumption that changes to party systems affect voters in a uniform manner. However, it is clear that there are strong theoretical reasons to suspect that voters may react differently to these potential changes depending upon their socio-economic background. Central to this is the notion that individuals from lower socio-economic backgrounds are more sensitive to changes in party systems than individuals from higher socio-economic backgrounds are. The idea behind the resource model of participation is that individuals with high levels of resources (full-time jobs, high income, more free-time) are more likely to vote (Verba and Nie, 1972; Brady et al., 1995; Smets and van Ham 2013). Individuals from higher socio-economic backgrounds participate in voting more frequently as the stakes are higher for these individuals and they possess the necessary resources to engage in political participation. In addition, parties may also target these individuals more aggressively, as they are aware that such people are easier to mobilize than are individuals from lower socio-economic backgrounds (Karp et al., 2008).

Evidence for this effect comes mainly from the US, with empirical studies routinely showing that, at the individual level, high levels of education and socioeconomic status are strong determinants of political participation including voting (e.g., Almond and Verba 1963; Verba and Nie 1972; Verba, Schlozman, & Brady, 1995). Early comparative work by Seymour Lipset (1960) also showed an association between socio-economic status and turnout in many countries. However, evidence from the U.K. by Heath and Taylor (1999) failed to find any association between social class and turnout, while a comparative study by Topf (1995) of EU member states found no association between levels of education (an indicator closely correlated with income) and turnout. The 'resource model' of participation suggests that individuals from higher socio-economic backgrounds have more incentives to turn out to vote than individuals from lower socio-economic backgrounds. Furthermore, as individuals

from higher socio-economic backgrounds vote predominantly for right parties and individuals from lower socio-economic backgrounds vote predominantly for left parties, there is potential to connect variation in voting to specific parties (Brooks and Brady 1999; Gelman 2009). For example, there is much evidence in the behavioral literature that U.S. voters tend to be better educated, older, and wealthier than non-voters (e.g., Leighley and Nagler, 1992).

The partisan theory of turnout further builds on the resource model of participation by suggesting that changes to party systems that increase participation would disproportionately affect left-voters (DeNardo, 1980, 1986; Verba, Schlozman, & Brady, 1995). In other words, the assumption made is that many non-voters would favor left parties if they actually voted, as individuals from higher socio-economic backgrounds largely vote regardless. Early U.S. based studies failed to find that increased levels of turnout helped Democrats (Tucker & Vedlitz 1986; Nagel and McNulty 2000), while studies from the second half of the Twentieth Century found only modest increases in support for Democrats (Citrin et al., 2003; Brunell and DiNardo 2004). However, stronger associations have been found outside of the American context with several studies showing more substantial gains for left parties at higher turnout levels (Pacek and Radcliff, 1995; Lee and Hwang, 2012; Wilford and Krivacsy, Forthcoming).

If the partisan theory of turnout is correct and voters on the left, by and large, vote less frequently than voters on the right, changes to the ideological diversity of party systems have the potential to affect left-of-center voters far more than right-of-center voters. Therefore, it is probable that changes to party systems affect individuals differently depending on their socio-economic background. It may be that much of the aggregate variation in turnout is the result of variation in turnout of individuals from lower socio-economic backgrounds-- individuals who are natural

constituents of left parties. It is entirely possible that a more ideologically diverse party system on the right has little impact on the propensity to vote for individuals from higher socio-economic backgrounds due to their existing higher levels of participation; conversely a more diverse party system on the left might have considerable impact on turnout, as these individuals vote at more variable levels. In sum, meaningful changes in ideological diversity on the left may affect turnout more than a more general increase in ideological diversity across the political spectrum.

While there are strong theoretical expectations that changes to party systems should affect turnout, current aggregate measures have realized largely disappointing results. The lack of interest in measures of polarization and the theoretical confusion surrounding the expected effects of number of parties may be due to existing measures of diversity assuming a uniform effect on voters. By more accurately identifying where variation is expected to occur, a more appropriate party system measure can be constructed. By measuring party systems in the aggregate we may capture a portion of the relationship between turnout and party systems, but this could conceivably miss much of the variance between left and right. If we accept that individuals from lower socio-economic backgrounds have lower levels of political engagement, and that these individuals vote predominantly for left parties, it may be more appropriate to instead measure the ideological diversity on the left. Based on all of this, in what follows I test the following hypothesis:

Hypothesis*: Party systems with high levels of ideological diversity on the left will produce high levels of turnout.*

5. Key Independent Variables

Measuring the concept of left party ideological diversity is potentially as demanding as measuring party system polarization. For example, some measures of polarization measure the difference between the furthest left and furthest right party in an election, while others calculate the standard deviation of the ideology score of parties competing in an election. The central thesis of this paper is that much of the variation in turnout is occurring on the left, so therefore a more appropriate measure needs to capture the ideological positioning of these parties rather than the broad range of ideologies offered to voters in an election. While an aggregate measure of left party diversity that captures the ideological spread of parties on the left may seem desirable, it is somewhat unsatisfactory, as it ultimately fails to capture the strength and ideological position furthest to the left. If the partisan theory of turnout is correct and voters on the left, by and large, vote less frequently than voters on the right, our measure of left party diversity needs to capture the furthest (viable) party to the left as this represents a more 'attractive' option for many non-voters. Put simply, a viable socialist party should attract higher turnout on the left than a party system with two center-left parties, as the former is likely to appeal more widely to those individuals most likely *not* to participate. While it is possible that a system with two viable center-left parties may compete more keenly for voters to drive turnout, they still represent a potentially unappealing choice to many peripheral voters on the left. Therefore, instead of measuring the 'spread' of options on the left, our indicator of left party ideological diversity should instead capture how far to the left the major left party is located. For example, I would expect that in a two party system like the US, the more leftist Democratic Party of the 1970s and 1980s would attract higher levels of turnout than the more moderate Democratic Party of the 1990s and 2000s. Alternatively, turnout should remain more stable in a multiparty system like Denmark, as the most

viable leftist option the Socialist People's Party, has deviated little from its leftist agenda over the last fifty years. Figure 3.1 provides a comparison of turnout and our measure of left party strength derived from the CMP for the US and Denmark for the period 1945 to 2013.[11] These two examples provide us with clear illustration of the proposed relationship between left party strength and turnout. For Denmark, consistently high levels of left party strength are correlated with high levels of voter turnout, also notice at no time does left party strength cross the threshold into positive territory. In other words, there is always a viable 'party of the left' for voters in Denmark. For the US, we see a narrowing of turnout and left party strength and unlike Denmark, in at least 4 elections the party of the left becomes a center-right party. The implication from Figure 3.1 is that party systems with viable left parties, will enjoy higher levels of turnout than party systems with weak left parties.

To test my hypothesis at the individual level, the CSES is utilized to measure party perceptions of the electorate. The CSES is a collaborative program asking common questions across a variety of democracies. Four waves of surveys have been undertaken for the CSES, and data from the latest survey is utilized in this study. Respondents are first asked to place themselves on a Left-Right scale (from 0 to 10) and then to position various parties from their nation on the same scale. To construct the individual level variable, aggregate party ideology scores are first calculated for each party in each country to identify which party is perceived by the respondents as the party furthest to the left. With the furthest left party identified, each respondent's perception of that party can be identified and utilized for our key independent variable that captures left party strength. So instead of utilizing each individual's rating for

[11] Descriptive statistics for both the country level analysis below and the individual level analysis is presented in the Appendix.

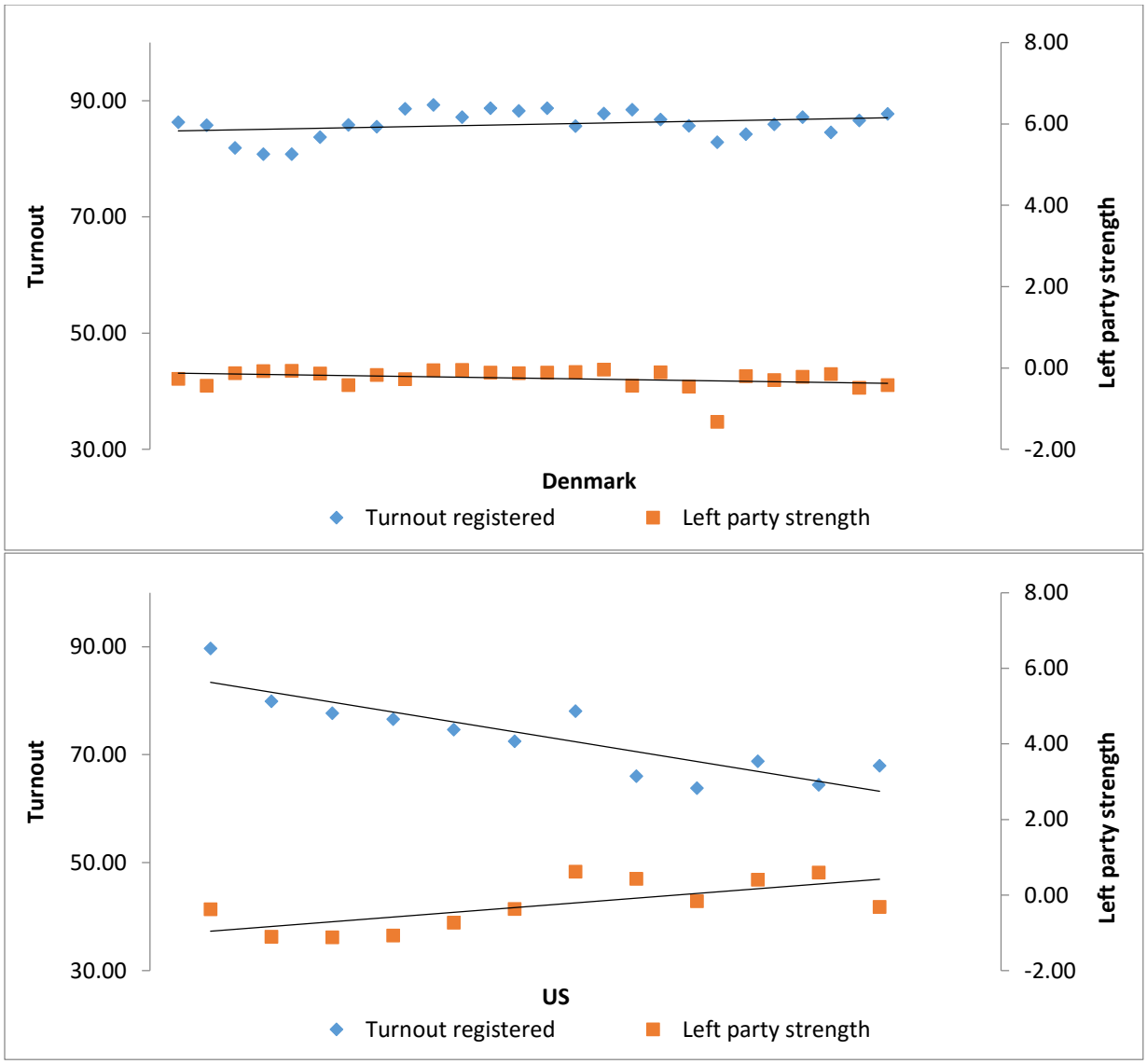

Figure 3.1: Comparison of turnout and left party strength in Denmark and US (1945-2013). Note: Turnout is calculated as percentage of registered voters that vote and left party strength is the weighted ideology score of the furthest party to the left in a national legislative election.

the left-most party, the party with the lower overall mean is identified and utilized for our variable, with each respondents ideology score for that particular party utilized in our analysis. For example, Australian respondents most commonly identified the Australian Greens as the furthest party to the left in 2013. In order to identify the furthest left party for each respondent, the ideology score attributed to the Australian Greens from each respondent was utilized for our key independent variable *Left party strength*. As lower values represent a more leftist party, a strong negative association with probability of voting should be expected. Substantively, a negative coefficient would imply that a greater level of perceived left party strength would be associated with voting.[12] Finally, to determine if each individual voted in the previous election, our dependent variable is based upon a question from the survey that asked if the respondent voted in the previous election.

For the country level analysis the CMP is utilized to identify the ideological scores of political parties from each general election. These ideology scores are then utilized to construct our key independent variable at the country level, L*eft party strength*. The CMP provides scores for each political party in an election and allows measurements of party ideological diversity to be constructed on both the left and the right over a long period of time. The CMP is therefore ideally suited to cross-national time-series manipulation. The validity of manifesto data has also been shown to be very stable. Gable and Huber (2000) compared this approach with other common approaches used to calculate left-right party positions and found it to generate the smallest errors when predicting party ideology placements. The CMP calculates a party's ideology score from the parties manifesto, producing a value which reflects either a left party (a negative score) or a right party (a positive score). In constructing this variable it is prudent to weight parties by size in order to differentiate between more electorally viable parties and

[12] *Left party strength* at the individual level has a mean of 2.83, standard deviation of 2.50, a range of 0 to 10, and 24,829 observations.

smaller parties that would have little realistic chance of entering government and meaningfully affect government policy. As the CMP scores many of these very small parties (including those with less than one percent of the vote), ideology scores are weighted by the party's share of the vote in the general election. Finally, to minimize the potential effect of small parties on the extreme fringes skewing this measure, parties that achieve less than 1 per cent of the vote are not considered. As larger negative values represent more leftist parties, a strong negative association with levels of turnout in an election should be expected for our second measurement of *Left party strength*.[13]

6. Individual Level Analysis

The individual level analysis is based on data from the CSES which includes over 8,000 respondents across 17 democracies.[14] In recalling our hypothesis, it is expected that greater left party strength will increase the probability of voting. The argument presented in the preceding section proposes that turnout can be best predicted at the party system level by focusing on measures that capture levels of left party strength. The functional form of the model proposed is:

[13] *Left party strength* at the country level has a mean of -0.48, a standard deviation of 0.47 and ranges from -2.93 to 1.17.

[14] The CSES surveys a wide range of democracies. The countries included in the 2011 to 2016 wave comprised of Australia, Austria, Belgium, Canada, Czech republic, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Japan, Mexico, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, USA. While the survey was also conducted in several other countries (including Belarus, Croatia, Chile, Hong Kong, Israel, Latvia, Peru, Philippines, Poland, Thailand and Turkey) as these are developing nations they were excluded from the analysis.

VOTED = a+b_1LEFT PARTY STRENGTH + b_2AGE + b_3GENDER + b_4EDUCATION + b_5SOCIOECONOMIC STATUS + b_6UNION MEMBER + b_7UNEMPLOYED b_8 + COMPULSORY + b_9EXECUTIVE + b_{10}PR + b_{11}NUMBER OF CHAMBERS + b_{12}NUMBER OF PARTIES + b_{13}POPULATION(LOG) + b_{14}WEEKENDVOTING + e

The dependent variable *Voted*, is a dummy variable indicating whether or not the respondent indicated that they either voted in the previous election. Data for *Voted* alongside all subsequent variables in the individual level analysis were obtained from the CSES. The variable *Left party strength* is the model's key independent variable, and is expected to be negatively associated with the dependent variable. Recall, the CSES constructs measures of ideological positioning on a scale that runs from 0 to 10, with parties further to the left having lower scores than parties further to the right. As larger negative values represent more leftist parties, a strong negative association should be expected. Six individual level controls are included: (1) *Age* is expected to be positively associated with voting; (2) *Gender* is included, with 1 indicating male and 2 indicating a female; (3) *Education level* is the level of education, with higher levels of education indicated with higher values; (4) *Socioeconomic status* is a continuous variable, with 1 indicating that the respondent is from the lowest socioeconomic background and 5 the highest; (5) *Union* is a dummy variable, with 1 indicating that the respondent is currently a member of a trade union; and (6) *Unemployed* is a dummy variable, with 1 indicating the respondent is unemployed. Seven country level controls are also included: (1) *Compulsory voting* is a continuous variable, with 4 indicating compulsory voting with sanctions and 1 indicating that voting is not compulsory in legislative elections; (2) *Executive* indicates if there is a parliamentary democracy (1) a mixed democracy (2) or a presidential democracy (3); (3) *PR* is a dummy variable with 1 indicating an electoral system with strict proportional representation and 0 any other form of electoral system; (4) *Number of chambers* is the number of chambers in the legislature, with 1 indicating a unicameral system

and 2 a bicameral system; (5) *Number of parties* is the effective number of parties in the most recent election; (6) *Population* is the log of the population; (7) *Weekend* is a dummy variable with 1 indicating an election taking place on the weekend, and 0 indicating an election that takes place on during the traditional working week.[15]

Logit regression with robust standard errors controlling for country effects is estimated and presented in Table 3.1. Column 1 reports the coefficients, while Column 2 reports the odds ratios. The key independent variable *Left party strength* is significant and negatively associated with the dependent variable. The coefficient on *Left party strength* indicates that*,* holding all other controls at a fixed value, we will see a 9 point increase in the odds of turning out to vote. This finding highlights how countries with high levels of left party strength tend to encourage voting, and confirms our hypothesis. Among our individual level control variables *Age, Education level, Socioeconomic status*, and *Union member* are also significant and positively associated with the probability of voting. These support what has long been known about likely voters that they tend to be older, better educated, from higher socioeconomic backgrounds, and members of unions. Among the country-level controls, the controls also behave largely as expected. The coefficients on *Compulsory voting*, *Executive* and *Weekend* are all significant and positively associated with voting, highlighting how compulsory voting laws, weekend voting and parliamentary democracies all encourage voting. *PR, Number of parties* and *Population* are significant and negatively associated with voting, highlighting how countries with large populations, and many political parties and proportional representation all discourage voting. Among these three controls, only *PR* is significant and the coefficient is not in the expected direction. While the effect is small (a 6 percent

[15] The appropriateness of the country level controls are discussed more fully in the country level analysis. A variable that captured the time (in months) since the last election was dropped from the analysis because of collinearity.

Table 3.1: Individual Level Analysis of Turnout and Left Party Strength

Dep. Var.: *Voted (1/0)*	*Estimates* *(S.E.)*	*Odds ratios* *(S.E.)*
Left party strength	-0.059**	0.943**
	(0.028)	(0.0)
Age	0.022***	1.022***
	(0.005)	(0.005)
Gender	0.017	1.017
	(0.132)	(0.135)
Education level	0.168***	1.184***
	(0.054)	(0.064)
Socioeconomic status	0.153***	1.166***
	(0.050)	(0.058)
Union member	0.354***	1.425***
	(0.112)	(0.160)
Unemployed	-0.322	0.725
	(0.374)	0.271
Compulsory voting	0.336***	1.396***
	(0.072)	(0.101)
Executive	0.628***	1.874***
	(0.082)	(0.154)
PR	-0.534**	0.587***
	(0.235)	(0.138)
Number of chambers	-0.091	1.095**
	(0.130)	(0.142)
Number of parties	-0.413	0.662
	(0.152)	(0.101)
Population(log)	-0.385***	0.680***
	(0.026)	(0.017)
Weekend	0.424***	1.528***
	(0.152)	(0.195)
Constant	6.828***	923.747***
	(0.848)	(783.688)
N	10153	10335
Pseudo r-squared	0.18	0.37
Prob > chi2	0.000	0.000

Note: Logit regression with robust standard errors controlling for country effects, robust standard errors in parentheses*. Coefficients reported in Model 1.1 and odds ratios in Model 1.2. Data from the Comparative Study of Electoral System (CSES) Module 4 (2011-2016).*
Sign.: *p ≤ 0.10; **p ≤ 0.05; ***p ≤ 0.01.

decrease in the odds of turning out to vote) this result is unusual. However, the selection of countries with proportional representation in this wave is small and includes notable outliers Switzerland and Poland, both of which are known to have abysmally low levels of turnout.

7. Country Level Analysis

The argument presented in the preceding section proposes that turnout can be best predicted at the party system level by focusing on measures that capture levels of left party strength. The functional form of the model proposed for my country level analysis is:

$$\text{TURNOUT} = a + b_1\text{LEFT PARTY STRENGTH} + b_2\text{RIGHT PARTY STRENGTH} + b_3\text{NUMBER OF PARTIES} + b_4\text{POPULATION} + b_5\text{DISPROPORTIONALITY} + b_6\text{WEEKEND} + b_7\text{FOUNDING} + b_8\text{COMPULSORY} + b_9\text{UNICAMERALISM} + b_{10}\text{CLOSENESS} + e$$

There are two main approaches to measuring our dependent variable voter turnout: measuring turnout as a percentage of the voting age population or the percentage of those registered to vote. Benny Geys (2006) calculates that from extant literature, percentage of voting age population is used around 47 percent of the time, while percentage of registered voters is used roughly 30 percent of the time. Well-known authors such as Jackman (1987) and Lijpart (1997) chose the former, while Franklin (1999) and Blais and Dobrzynska (1998) use the latter measure. As objections to both approaches have been cited, I will simply run models using both registered voter turnout and turnout as a percentage of the voting age population as the dependent variable. Data for both turnout variables was obtained from the widely utilized International Institute for Democracy and Electoral Assistance (IDEA). The variable *Left party strength* is the model's key independent variable and is expected to be negatively associated with my

turnout variables. The CMP constructs measures of ideological positioning on a scale that runs from -100 to 100, with parties further to the left having lower (usually negative) scores than parties further to the right. Included as a control, *Right party strength* is constructed in the same fashion as *Left party strength*, but is not expected to be associated with turnout. Counting the number of parties in an election has proved a popular surrogate for capturing diversity in a party system. While an aggregate measure of polarization has at times exhibited a positive relationship with turnout, the number of parties in an election has often had a negative association with turnout (Jackman, 1987; Blais and Carty, 1990; Jackman and Miller, 1995; Blais and Dobrzynaska, 1998; Radcliff and Davies, 2000). As this control is a poorly conceptualized indicator of diversity in a party system, *Number of parties* is expected to simply follow convention and have a negative relationship with turnout. The approach to creating this method follows Gallagher's (2014) calculations that are based upon Laakso and Taagepera's (1979) formula of the effective number of electoral parties.[16] Descriptive statistics of the dependent variable, key independent variables and control variables are presented in Table C4 in the Appendix. Commonly used control variables are also included. The variable *Population* is the population (in millions) of each country at the time of the election. Countries with smaller populations might be expected to have higher levels of turnout than larger countries due to greater social cohesion and homogeneity that facilitate a greater sense of civic engagement (Hoffman-Martinot, 1994). Others have used a rational choice argument, suggesting that the smaller the size of the country, the greater the probability that a few votes might make a difference in an election (Blais, 2000; Geys, 2006). *PR* is a dummy variable that stands for proportional election system. Existing research suggests that countries with PR and/or larger districts do increase turnout (Jackman, 1987; Blais & Carty, 1990; Jackman & Miller, 1995; Franklin,

[16] The effective number of parties is calculated as follows: Effective Number Parties = $1/\sum$ (party seat share in legislature).

1996; Radcliff & Davis, 2000). PR is coded as 1 when all are seats are allocated through PR and 0 in all other types of electoral systems. A strong positive relationship is expected. *Weekend* is a dummy variable with 1 indicating an election taking place on the weekend, and 0 indicating an election that takes place on during the traditional working week. While Franklin (1996) found higher turnout when elections take place on a Sunday, others like Norris (2002) found no effect. The variable *Founding* indicates if an election has taken place for the first time in a newly democratic country. According to O'Donnell and Schmitter (1986) higher levels of turnout can be expected due to the excitement that such a new and novel experience provides. *Founding* is a dummy variable with 1 representing the first election in a newly democratic country and 0 indicating any other election. *Compulsory* is another dummy variable with 1 indicating compulsory voting rules and 0 indicating a country that does not require voting. Although some countries largely fail to enforce compulsory voting, such as Greece for example, in general any compulsion to vote should have a positive effect upon turnout (Mackerras, 1999). The variable *Closeness* represents how competitive an election will be. In a similar fashion to the population variable, it has been suggested that close elections spur participation as the closer the more competitive the election, the greater the probability becomes that one single vote could make a difference (Blais, 2000; Geys, 2006). Finally, *Unicameralism* is a dummy variable with 1 representing a country with a single elected chamber and 0 indicating a country with a bicameral system. The prediction is that a country with an elected upper house reduces the decisiveness of an election, as it represents a further potential hurdle to policy change (Jackman, 1987).[17]

[17] The variable *unemployment rate* which captured the unemployment rate was also considered as a control but ultimately abandoned due to collinearity with the variable *unicameralism*. I chose to drop the unemployment variable for a couple of reasons. Firstly, there is a clearer theoretical expectation of a relationship between turnout and *unicameralism* predicted in the literature, while *unemployment* has little track record of predicting turnout at the country level. Secondly, in all 3 models below *unicameralism* performs well showing statistical significance, while *unemployment* failed to find significance in any model.

Our country level estimation utilizes data from 369 elections across 26 democracies. In recalling our hypothesis, I expect that party systems with high levels of left party strength will produce high levels of voter turnout. To test our hypothesis, descriptive statistics are examined and presented below. Figure 3.2 plots turnout as a percentage of registered voters alongside our measure of left party strength. This confirms that turnout has indeed declined since the 1940s, going from a high of 84 percent in the post-war years to a current low of just 69 percent in the period 2010 to 2013. Our measure of left party strength also declines during this period. Although this decline is far more erratic, a simple linear trend-line does highlight a general declining trend since the 1940s.

The estimation below is based on data for 369 elections across 23 democracies with data for *Left party strength* and *Right party strength* based upon data from the CMP. Multiplicative interaction models with fixed effects for countries and years are estimated and presented in Table 3.2.[18] Turnout is calculated as both a percentage of all eligible voters and as a percentage of registered voters. To establish the suitability of our measure of left party strength, three alternative measures of party polarization and a further three measures of ideological diversity on the left are also considered and presented in Models 2.1 and Models 2.3. Our three measures of polarization measure the ideological diversity of the party system as a whole, with *Polarization1* capturing the standard deviation of the ideological score of all parties weighted by vote-share, *Polarization2* the unweighted standard deviation and *Polarization3* simply the difference between the furthest left and furthest right party. For our 3

[18] A fixed effects model was chosen to run the regression. While man pointed to the merits of a random effects model especially with regard to their generalizability and extendibility (see for example Beck and Katz, 2007; Bell and Jones, 2015) and a Hausman test showed a preference for such a model (see Green, 2008), a fixed effects model was eventually chosen. The reasons for this are twofold. Firstly, the fixed effects model is widely regarded as more appropriate for the type of analysis undertaken above. Secondly, coefficients are usually smaller in a fixed effects model and so the "bar is higher" for significance. So, in an abundance of caution a fixed effects model is reported. As expected, the random effects model showed higher levels of significance.

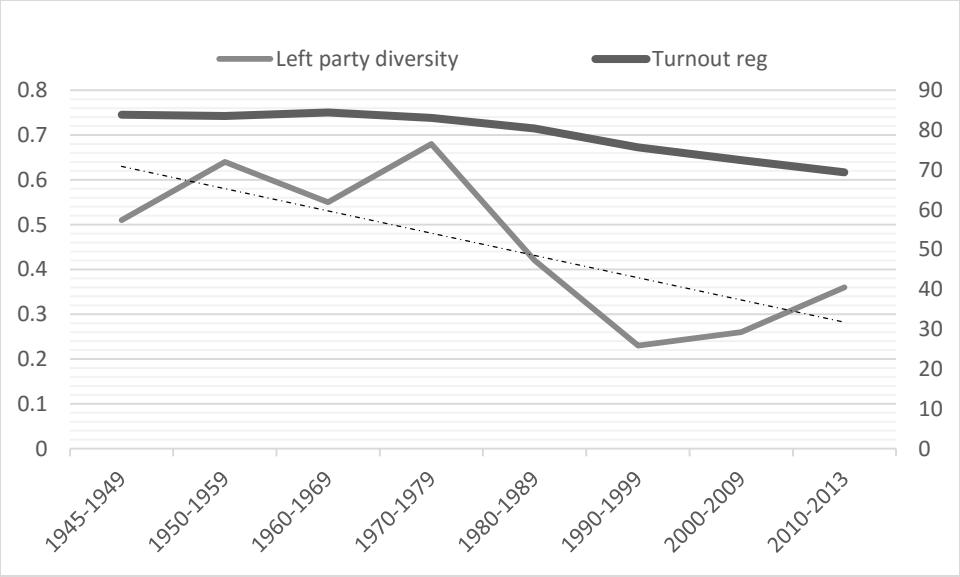

Figure 3.2: Turnout and left party strength by decade

Table 3.2: Left Party Strength and Turnout (1945-2012)

	3.1	3.2	3.3	3.4
DV	Turnout eligible population		Turnout registered voters	
	Estimates (S.E.)	Estimates (S.E.)	Estimates (S.E.)	Estimates (S.E.)
Polarization1	0.004		0.006	
	(0.004)		(0.004)	
Polarization2	-0.059		-0.098	
	(0.236)		(0.233)	
Polarization3	-0.068		-0.055	
	(0.073)		(0.349)	
Effnumleft	-0.447		-0.527	
	(0.373)		(0.349)	
Leftstddev	0.141		0.161	
	(0.177)		(0.102)	
Furthestleft	0.000		0.032	
	(0.065)		(0.050)	
Left party strength	-2.210*	-2.242***	-2.317*	-2.240***
	(1.253)	(0.843)	(1.200)	(0.682)
Right party strength		-0.024		1.128*
		(0.747)		(0.603)
Numer of parties		-0.917		-1.000
		(0.905)		(0.632)
Population		-0.112		-0.221***
		(0.104)		(0.055)
PR		10.956***		8.267***
		(1.200)		(0.698)
Weekend		-1.721		-2.062
		(3.020)		(3.874)
Founding		4.073		7.901
		(3.902)		(3.960)
Compulsory		11.027***		12.573***
		(2.585)		(2.316)
Unicameralism		5.292***		2.472***
		(0.719)		(0.511)

Table 3.2: Left Party Strength and Turnout (1945-2012). Continued

DV	3.1	3.2	3.3	3.4
	Turnout eligible population		Turnout registered voters	
	Estimates (S.E.)	Estimates (S.E.)	Estimates (S.E.)	Estimates (S.E.)
Closeness		-0.048		-0.057
		(0.064)		(0.056)
Constant	76.690***	71.947***	81.328***	81.993***
	(1.907)	(5.597)	(1.868)	(4.049)
N	414	437	414	437
Adj R-squared	.09	.78	.14	.78
Prob > chi2	0.010	0.000	0.001	0.000

***p ≤ 0.01, **p ≤ 0.05, *p ≤ 0.10.

Note: Multiplicative interaction models with fixed effects for countries and years, robust standard errors in parentheses.

measures of ideological diversity only on the left, *Effnumleft* is the effective number of left parties, *Furthestleft* is the ideological score of the furthest left party which attained more than one percent of the vote in the election, and *Leftstddev* is the standard deviation of only the left parties competing in an election. The results from Models 3.1 and 3.3 confirm that *Left party strength* is negatively associated with turnout. None of the other variable produce significant coefficient estimates. Recall that the CMP calculates a party's ideology score from the parties manifesto, producing a value which reflects either a left party (a negative score) or a right party (a positive score), thus a negative coefficient was expected confirming that left party strength has a positive relationship with turnout. The fully specified models are presented in Models 3.2 and 3.4. Model 3.2 calculates turnout as the percentage of population that is eligible to vote, and Model 3.4 calculates turnout as the percentage of registered voters that vote in an election. Models 3.2 and 3.4 include our key independent variable *Left party strength* and also include *Right party strength* as a control variable. In both models the coefficient on *Left party strength* is significant and negatively associated with turnout. Substantively, this means that the further to the left a left party is in an election, the greater the turnout. This also confirms my primary hypothesis. In Model 3.2 *Right party strength* is insignificant. However, when the dependent variable changes to percentage of registered voters (in Model 3.4), *Right party strength* becomes significant at the 0.10 level. While it is not clear as to why this relationship would be expected to occur, the positive effect that a more rightist party may have on turnout for registered voters may be due to two related factors. Firstly, registered voters as a subset of the eligible voting population could be viewed as a more informed population that may be driven to turnout to vote by more extreme parties on the left and the right. In other words, increased turnout is being driven by more informed centrist and left leaning individuals who may be turning out to in response to these more rightist parties on the right. Secondly, there has been much

discussion of late as to effect of European populist anti-immigration parties on turnout. The positive coefficient on *Right party strength* in Model 3.4 may be picking up the mobilizing effect of some of these parties. While this positive effect is weak and is not reproduced in Model 3.2, further inquiry may be fruitful here to uncover if these populist anti-immigration parties are driving increased turnout or are merely drawing from center-right voters. Models 3.2 and 3.4 also include common control variables. From theses controls compulsory voting (*Compulsory*), countries with unicameral systems of government (*Unicameralism*) and countries with proportional representation (*PR*) are all significant and in positively associated with turnout. In addition, the size of the population (*Population)* is negatively associated with turnout in Model 3.4. The controls in both models are all in the expected direction and consistent with the literature. The results from across all 4 models suggest that voters respond positively to party systems with a strong viable party on the left, confirming the hypothesis and highlighting how party systems can meaningfully affect voter turnout.

8. Conclusion

Clearly, there are good reasons to suspect that party systems can affect turnout. Intuitively, it would seem odd to separate the act of voting with the parties available. After all, some appraisal of the parties on offer is presumably made before a voter visits the polling booth. It is also uncontroversial to suggest that party systems with few dissimilar parties would attract lower levels of turnout than in party systems with many parties spanning the ideological spectrum. What this paper has contributed to the debate is an acknowledgement that while meaningful choices do matter to turnout, meaningful choices matter more for supporters of left parties. As these individuals have fewer incentives and fewer spare resources to participate in the political process, they are most sensitive to changes to party systems.

Simply put, measures of party systems need to replace poorly performing proxies of diversity like party polarization, as they simply fail to capture where variation is expected to occur. This chapter clearly shows that a carefully constructed measure of left party strength is positively associated with turnout at both the individual and country level.

This chapter also helps address one of the more curious findings on party systems--that systems with many political parties are associated with low levels of turnout. The poor performance of the number of parties variable across all of the models, alongside the clear positive association between strength of left parties and turnout, suggests that there is little reason to continue to expect that the number of parties in an election should have any effect upon turnout. While a positive association between turnout and number of parties is intuitive and compelling, the long reported negative association makes little, if any, sense. The inclusion of left party strength in the above models finally renders this variable insignificant.

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Appendix

Table C1: Descriptive Statistics: Country-Level Data

Variable	Mean	SD	Min	Max
Turnout (registered voters)	79.83	11.77	41.68	97.60
Turnout (eligible population)	75.55	12.68	34.9	99.57
Polarization1	20.24	8.65	1.15	55.59
Polarization2	478.66	320.31	48.72	2769.48
Polarization3	49.88	22.79	0	131.08
Effnumleft	2.21	1.25	0	8.81
Leftstddev	13.36	5.54	0	47.57
Farthestleft	-27.91	14.07	-74.30	29.26
Left party strength	-0.48	0.47	-2.93	1.17
Right party strength	0.42	0.52	-0.90	2.64
Number of parties	4.10	1.46	1.99	10.28
Population	29.51	48.30	0.14	315.00
Proportional representation	0.61	0.49	0	1
Weekend voting	0.68	0.47	0	1
Founding election	0.01	0.10	0	1
Compulsory voting	0.24	0.43	0	1
Unicameralism	0.38	0.49	0	1
Closeness	9.76	8.12	0.01	40.03

Measures and Coding: Country-Level Data

Turnout (registered): Valid voter turnout: percentage registered voters casting valid votes in national legislative elections. Source: International Institute for Democracy and Electoral Assistance (ID).

Turnout (population): Valid voter turnout: percentage of eligible population casting valid votes in national legislative elections. Source: International Institute for Democracy and Electoral Assistance (ID).

Polarization1: Standard deviation of the ideology score of parties that gain over 1% of the vote in national legislative elections. Source: Comparative Manifesto Project.

Polarization2: Standard deviation of the ideology score of parties (weighted by party size) that gain over 1% of the vote in national legislative elections. Source: Comparative Manifesto Project.

Polarization3: Difference between the furthest left and furthest right parties that gain over 1% of the vote in national legislative elections. Source: Comparative Manifesto Project.

Effnumleft: The effective number of left parties at the electoral level. Derived from Gallagher, 2014 (www.tcd.ie/Political_Science/staff/michael_gallagher/ElSystems/index.php, accessed Jan 2015.)

Leftstddev: Standard deviation of the ideology score of parties on the left which gain over 1% of the vote in national legislative elections. Source: Comparative Manifesto Project.

Farthestleft: Ideology score of the party furthest to the left which gains over 1% of the vote in national legislative elections. Source: Comparative Manifesto Project.

Left party strength: Ideology score of the party furthest to the left (weighted by party size) which gains over 1% of the vote in national legislative elections. Source: Comparative Manifesto Project.

Right party strength: Ideology score of the party furthest to the right (weighted by party size) which gains over 1% of the vote in national legislative elections. Source: Comparative Manifesto Project.

Parties: The effective number of parties at the electoral level. Source: Gallagher, 2014 (www.tcd.ie/Political_Science/staff/michael_gallagher/ElSystems/index.php, accessed Jan 2015.)

Polarization: Standard deviation for all parties that receive at least one per cent of the votes in each national election, weighted by vote share. Source: Comparative Manifesto Project.

Population: Estimated population size in millions. Source: The World Bank (www.worldbank.org).

Proportional representation: A (0,1) dummy variable that takes the value of 1 if a country has list PR.

Weekend voting: Elections held on Sunday (1), other day off the week (0). Source: Klaus Armingeon, Laura Knöpfel, David Weisstanner and Sarah Engler. 2014. *Comparative Political Data Set I 1960-2012.* Bern: Institute of Political Science, University of Berne.

Founding: A country's first democratic election (1), other (0). Source: International Institute for Democracy and Electoral Assistance (IDEA; www.idea.int).

Compulsory voting: Compulsory voting laws (1), other (0). Source: International Institute for Democracy and Electoral Assistance (IDEA; www.idea.int). *Unicameralism:* A (0,1) dummy variable that takes the value of 1 if a country has a unicameral system.

Closeness of the election: Difference between the vote shares of the two largest parties. Source: International Institute for Democracy and Electoral Assistance (IDEA; www.idea.int).

Table C2: Descriptive Statistics: Individual-Level Data

Variable	M	SD	Min	Max
Voted in election	0.85	0.36	0	1
Left party strength	2.83	2.496	0	10
Age	51	17.39	16	103
Gender	1.52	0.50	1	2
Education level	4.80	1.94	1	9
Socioeconomic status	2.95	1.41	1	5
Union member	0.15	0.36	0	1
Compulsory voting	1.48	1.03	1	4
Executive	1.29	0.59	1	3
PR	0.43	0.50	0	1
Unemployment rate	6.99	4.10	1	19.7
Number of chambers	1.69	0.46	1	2
Number of parties	4.34	1.34	2.19	6.32
Population (log)	16.83	1.64	12.69	19.56
Weekend voting	0.59	0.49	0	1
Months since last election	39.16	14.29	2	60

CHAPTER IV: UNDERSTANDING THE COMPETING EFFECTS OF ECONOMIC HARDSHIP AND INCOME INEQUALITY ON VOTER TURNOUT.

Abstract

The final substantive chapter considers the effect that the economy has on turnout. While there is a strong theoretical expectation that economic hardship should be negatively associated with turnout, results have been decidedly mixed, with proxy indicators such as unemployment and income inequality failing to show a consistent association with turnout. However, I propose that these patchy results are largely due to the potentially confounding effects of economic hardship and inequality. By considering both of these factors in models of turnout, the effects of each should become clearer. Furthermore, the effects of both inequality and economic hardship are predicted to affect individuals differently depending upon their socioeconomic status. By controlling for this variation and considering both economic hardship and inequality jointly with socioeconomic status, clearer associations are uncovered. Findings show that economic hardship negatively affect rates of participation for those individuals from lower socioeconomic backgrounds, while rising inequality is unexpectedly shown to negatively affect participation for individuals from higher socioeconomic backgrounds.

1. Introduction

In a departure from examining party systems, this chapter will examine how economic factors affect voter turnout across democracies. This chapter has two complimentary aims. Firstly, it will focus on establishing a more rigorous theoretical understanding of how the performance of national economies might affect turnout by attempting to disentangle the competing effects of economic hardship (such as increased unemployment) and economic inequality. While both have been utilized to make the case that the economy can affect turnout, theoretically, these are not necessarily the same and potentially

have confounding effects upon turnout if both are not accounted for. Second, these effects will be further examined to uncover how inequality and economic hardship affect participation for individuals from different socioeconomic backgrounds. Spotty results from the existing literature may largely be due to the variable effect that economic performance has on turnout on those from different backgrounds.

There are a number of good reasons why the economy is a potentially interesting predictor of voter turnout and should not be abandoned. Firstly, and unlike most institutional factors, the economy is highly dynamic having the potential to explain declining levels of turnout *within* countries over the last several decades. Secondly, there is voluminous research going back to at least the 1930s that shows that individuals hold democratic governments to account for poor economic performance by routinely voting them out of office (see for example Tufte, 1978; Fiorina, 1978; Chrystal & Alt, 1981; Hibbs, 1977; Fair, 1988; Erikson, 1989; Dorussen & Taylor, 2002). Lastly, evidence from studies of political participation clearly highlight that at the individual level, high levels of education and income are strong determinants of voting. In other words, those who regularly vote have more resources than those who participate less frequently, suggesting that economic resources may play at least a partial role in political participation.

While economic factors may have some potential as a predictor of turnout, existing empirical studies have failed to find any consistent relationship. Studies at both the individual and country level have realized only mixed results. Empirical support for withdrawal from political participation has found some support (e.g. Brody and Sniderman 1977; Kinder and Kiewet 1981; Southwell 1988; Rosenstone 1982) a similar number have found support for mobilization and increased voter turnout (e.g. Schlozman and Verba 1979; Arceneaux 2003: Killian, Schoen, and Dusso 2008) and almost as many mixed or null results (Powell 1986; Lewis-Beck and Lockerbie 1989; Radcliff 1992; Aguilar and Pacek 2000). To capture

economic effects upon turnout, studies have routinely utilized indicators such as the annual unemployment rate at the country level or feelings of economic well-being at the individual level. More recently, several empirical studies have shifted focus away from indicators such as unemployment levels towards income inequality. Again, however, results have been mixed with a divide amongst studies that find support for the withdrawal hypothesis (Mahler 2002; Lister 2007; Anderson & Beramendi 2008; Solt 2010) and those that show null or mixed results (Brady 2004; Galbraith and Hale 2008; Stockemer and Scruggs 2012).

In this chapter I will argue that models of turnout need to include both inequality and economic hardship as these are not necessarily the same and potentially have confounding effects if they are not accounted for. Furthermore, the effects of inequality and economic hardship on turnout will depend upon socioeconomic status, with individuals from lower levels being most affected by these economic changes. Negative economic effects of increased inequality and economic hardship are most widely felt by those from lower socioeconomic backgrounds, therefore, participation rates of these individuals will be most affected by changes to these factors. Furthermore, individuals from lower socioeconomic backgrounds will have divergent responses to economic hardship and income inequality. Specifically, I would expect that rising levels of inequality will i*ncrease* turnout for those from lower socioeconomic backgrounds. These individuals have the most to gain from reversing rising inequality therefore I would expect that these individuals would participate at higher levels as inequality increases. Conversely, rising levels of economic hardship will *decrease* participation for those from lower socioeconomic backgrounds. As resources are predicted to be critical to political participation, those from lower socioeconomic backgrounds will be most affected by increased economic hardship and at the highest risk of withdrawal from voting.

In the following my principle finding is that the economy meaningfully affects turnout only for those from lower socioeconomic backgrounds. For these individuals high levels of economic hardship decrease these individuals' chances of voting. For those from higher socioeconomic backgrounds, high levels of inequality actually decrease their chances of voting suggesting the effect that inequality has on turnout is poorly understood. Empirical support for this argument is provided by analysis of voter participation rates in 41 elections from 22 countries between 2005 and 2013. I begin by elaborating the theory that income inequality and economic hardship should be examined in conjunction to understand how they affect turnout. I then discuss how inequality and economic hardship have greater potential to affect those from lower socioeconomic backgrounds. Next, I discuss the data and statistical methods employed before presenting the empirical evidence. The paper concludes with a discussion of the results and the implications of this study.

2. Why Economic Hardship Matters to Turnout

There have been numerous empirical studies attempting to uncover how economic hardship affects political participation, however, there has been precious little consensus on exactly how economic hardship might be expected to affect turnout in national elections. Nevertheless, economic effects remain an appealing area of inquiry. Unlike institutions, the economy is far from static having the potential to vary across time. The economy also has the potential to impact the participation of individuals from lower socioeconomic backgrounds more severely, as these individuals often bear the brunt of economic hardship. In other words, those at most risk of withdrawal from participation are those most sensitive to economic downturns and so some effect seems likely. Furthermore, empirical studies have routinely shown that at the individual level, high levels of education and socioeconomic

status are strong determinants of political participation further boosting the suspicion that economic hardship may have an association with turnout at the country level (see for example Almond & Verba 1963; Verba & Nie, 1972 Brady et al., 1995; Smets & van Ham, 2013).

Support for mobilization is found in the political attitudes and behavior literatures which argues that unfavorable economic conditions encourage participation as people to seek redress for their perceived, and often very real, grievances (see for example Schlozman & Verba 1979; Lau 1982). Simply put, the effect of economic hardship is to motivate individuals to participate in the democratic process to punish elected officials for poor economic performance (Tufte, 1978; Fiorina, 1978; Chrystal & Alt, 1981; Hibbs, 1977; Fair, 1988; Erikson, 1989; Dorussen & Taylor, 2002). Mobilization has found some empirical support in the literature with a number of studies finding that increased economic hardship does increase turnout (Schlozman and Verba 1979; Arceneaux 2003: Killian, Schoen, and Dusso 2008). Indirect support is also provided by evidence that highlights how national economic performance can have profound effects upon the fortunes of political parties. Much research suggests that individuals in democracies hold their governments to account for poor economic performance at the ballot box. While voters do not always punish governments under all conditions of economic hardship, research clearly shows that voters are likely to punish governments for high levels of national unemployment, low levels of growth, or high levels of inflation (see for example Tufte, 1978; Fiorina, 1978; Chrystal & Alt, 1981; Hibbs, 1977; Fair, 1988; Erikson, 1989; Dorussen & Taylor, 2002). This voluminous research clearly highlights how governments suffer electorally during periods of economic hardship. While it may be too simplistic to suggest that just as economic hardship affects which party an individual supports in an election it also affects an individuals' propensity to vote, many argue that unfavorable economic conditions would have a similarly positive effect upon turnout.

While mobilization seems an attractive hypothesis others argue that withdrawal should be expected with increased levels of economic hardship. The main argument borrows heavily from the resource-model of participation with familiar arguments made that political parties are likely to ignore the needs of groups with few resources, as they are unlikely to prioritize the needs of groups that largely don't vote (Mahler, 2002). Furthermore, increases in economic hardship are theorized to reduce the level of surplus resources available to citizens leading many individuals from lower socioeconomic backgrounds to expend ever decreasing resources on basic human needs rather than political participation (Brody and Sniderman 1977; Kinder and Kiewet 1981; Southwell 1988; Rosenstone 1982. Support for withdrawal is also found in related research that points strongly to the positive effect that resources have on political participation. By treating income as a political resource it is easy to imagine how individuals from higher socioeconomic backgrounds with more resources would participate in politics at a higher rate than those with fewer resources (Verba & Nie, 1972; Brady et al., 1995; Smets & van Ham, 2013). Individuals from higher socio-economic backgrounds participate more frequently as the stakes are higher as they potentially have more resources to lose from unfavorable shifts in public policy (Verba & Nie, 1972; Verba, Schlozman, & Brady, 1995). Evidence for this effect comes mainly from the US with research showing that increases in the levels of socioeconomic backgrounds strongly foster turnout in US campaigns (e.g. Verba & Nie, 1972; Verba, Schlozman, & Brady, 1995). Early comparative work by Seymour Lipset (1960) also showed an association between socio-economic status and turnout in a variety of democracies. Support for withdrawal is further bolstered by findings from individual level studies on economic hardship. Studies consistently show that individuals suffering from unemployment or economic distress are primarily preoccupied with their own pressing economic problems and not with political participation (Brody & Sniderman 1977; Kinder and Kiewiet 1981; Southwell, 1988). Finally,

others point to way that employment increases civic participation, and so periods of prolonged unemployment may well weaken civic skills and potentially political participation (Verba, Schlozman & Brady 1995). The idea that the workplace can be crucial arena for fostering civic and political participation has been reported by numerous studies and so periods of unemployment may be detrimental to continued political participation (e.g., Freeman 1997, Brady et al., 1999).

While it is plausible to argue that increased economic hardship could increase voter turnout, it seems likely that withdrawal would be more common for several important reasons. Firstly, mobilization would only seem likely if there was evidence that individuals from lower socioeconomic backgrounds participated more than those from higher socioeconomic backgrounds. As there is much evidence to the contrary, it seems implausible to suggest that increased economic hardship would lead to higher levels of turnout. In other words, it would be somewhat contradictory to propose that turnout is positively associated with socioeconomic status whilst also positively associated with economic hardship. More likely that economic hardship would be negatively associated with turnout, as that is logically consistent with what we know about socioeconomic status and voting. Furthermore, there is compelling evidence that resources matter for participation. Higher levels of participation for those from higher socioeconomic backgrounds, is often understood to be in response to their own higher levels of resources. While the associated cost of voting is relatively low, the cost of abstaining could be seen as far more significant for those with high levels of resources, especially if unfavorable policies are enacted. Therefore it seems likely that withdrawal, and not mobilization, would follow from increased economic hardship. Finally, there is little evidence that individuals who suffer economic hardship apportion blame for their distress on elected officials, instead, evidence suggests that individuals internalize episodes of personal economic hardship. So while it is perfectly possible that poor economic performance purely at

the national level may mobilize individuals to vote, there is no evidence that economic hardship at the individual level would mobilize individuals to participate at higher levels.

3. Why Income Inequality Matters to Turnout

The lack of any real progress in uncovering an unambiguous relationship between the economy and turnout has led some to pursue alternative measures of economic hardship. One such measure, income inequality, has begun to receive attention as a possible alternative. Again, theoretically one could persuasively argue for all potential relationships. Rising levels of income inequality could lead to mobilization, withdrawal from political participation, or simply a null effect. In a variation of the resource based explanation, those who argue for the withdrawal hypothesis suggest that low levels of participation are, in part, a function of economic inequality. The basic argument suggest that low levels of turnout are concentrated among individuals with few resources and therefore these individuals have little at stake in the political process and are thus much harder to mobilize (Lijphart, 1997; Verba, Nie, and Kim, 1978). This lack of mobilization leads to these groups being ignored by politicians and instead the needs of groups with more resources who participate more frequently are prioritized by politicians and political parties. In other words, politicians and political parties are likely to ignore the needs of groups with few resources as they are unlikely to prioritize the needs of groups that largely don't vote thus compounding the effects of lack of resources (Mahler, 2002).

Conversely, it could also be argued that increased inequality leads to mobilization. For example, increases in inequality might be expected to increase participation as those individuals with fewer resources become politicized and head to the polls to protest their dwindling share of resources. Here

the expectation of increased turnout is often based upon the notion of negativity bias from the political attitudes and behavior literature (Schlozman & Verba 1979; Lau 1982).[19] Further support comes from conflict theory which also predicts mobilization as inequality increases. Marx (1888) suggested that as the upper classes accumulate wealth, class conflict would become inevitable as those in poverty became more aware of inequality and would ultimately fight to overturn the current economic order. By expanding conflict theory to political participation, we can surmise that increased political participation might result from high levels of income inequality.

Clearly, there are two distinct expectations of how inequality should affect political participation. The resource model predicts withdrawal, while conflict theory and the negativity bias predict mobilization. If there is a divide in the literatures, it can be broadly classified between those studies that support the withdrawal hypothesis (Mahler 2002; Lister 2007; Anderson & Beramendi 2008; Solt 2010) and those that show null or mixed results (Brady 2004; Galbraith and Hale 2008; Stockemer and Scruggs 2012). As there is little support for the mobilization hypothesis in the literatures, the resource model of participation seems, at least on the surface, to better explain how increases in inequality potentially affect turnout.

However, there are some serious theoretical reservations that undermine the withdrawal hypothesis. Firstly - and this may be key in understanding why a number of studies find no empirical support for withdrawal - it is not clear that in all instances a rise in inequality would also result in a rise in economic hardship. For example, a rise in inequality could simply be a function of rising levels at the top end of the income scale, without a concurrent decline in levels of income for the rest of the

[19] It is often assumed that voters vote for candidates that they have a positive perception of however, some have begun to suggest that at times another bias may also come into play which promotes voting *against* a candidate rather than *for* a candidate.

population. Under such a situation would withdrawal still be expected, or should mobilization instead be expected? After all, if the levels of resources remain static for the vast majority of the population turnout should also remain unchanged. While it is possible that those who benefit from higher levels of inequality participate more as their own resources increase, there is less scope for this considering the already high levels of participation displayed by those from higher socioeconomic backgrounds. Alternatively, if rising levels of inequality are associated with increased economic hardship for those from lower socioeconomic backgrounds, withdrawal would certainly seem probable. However, the causal mechanism in this example is not a rise in inequality per se, rather, it is simply a decline in the level of resources available to those at the bottom-end and this could as easily be attributed to increased economic hardship. In other words, while a compelling story is being told about inequality and withdrawal, the negative effects of economic hardship could quite easily be driving this relationship. Of course, a number of studies have built on the withdrawal hypothesis to show an unambiguous relationship between inequality and turnout (see for example Mahler 2002; Lister 2007; Anderson & Beramendi 2008; Solt 2010). However, there is always the suspicion of a spurious relationship and that these studies are, at least in part, capturing declining levels of real income for those at the bottom-end and not just inequality. Measures of inequality are, after all, measures of how income is shared across society. Whether one uses the Gini index or the difference between the top 20 and bottom 20 percent of the population, these measures tell us little about the real wealth of those at the bottom-end.

In summary, there are compelling reasons for including both inequality and economic hardship in any model of voter turnout. While there is theoretical disagreement as to the effects of each and precious little empirical consensus, it is probable that the economy affects turnout but that these effects are unclear due to the potential for overlap between inequality and economic hardship.

4. Economic Hardship, Income Inequality, and Socioeconomic Status

While there are good theoretical reasons to suspect that both income inequality and economic hardship should both be associated with political participation, a lack of scholarly consensus alongside conflicting empirical results, have created uncertainty as to the expected effects of the economy on participation. However, the disproportionate effect that economic hardship has on the political participation of individuals from lower socioeconomic backgrounds suggests that this could still be a rich area of study. Research from the political behavior literature suggests that economic hardship has a relationship with turnout, with many studies of political participation at the individual level routinely showing that resources are the most critical components of civic participation (see for example Verba, Schlozman, & Brady, 1995). The implication from this literature is simply that those with higher levels of resources participate in politics more frequently than those with lower levels of resources, and as voting is the most common form of political participation, those from lower socioeconomic backgrounds would be most of risk of withdrawal from declining levels of resources. Therefore, I would expect that as levels of economic hardship increase there should be a disproportionate negative effect on participation levels for those from lower socioeconomic backgrounds. For those from higher socioeconomic levels, increased economic hardship would have less potential to negatively affect participation as these individuals have, by definition, more spare resources to direct towards participation. In other words, if resources are key to participation, declining levels of resources are likely to negatively affect the participation of those with fewer resources more keenly than the participation rates of those with greater resources. Furthermore, the mobilization literature points to a potential positive effect that economic hardship has on participation for those with high levels of resources. There is much incentive for continued participation from these individuals during periods of economic hardship to mitigate the

potential negative effects of economic hardship on their surplus resources. Those from lower socioeconomic backgrounds do not have any similar incentive. In sum, high levels of economic hardship will have a negative effect upon participation on those from lower socioeconomic backgrounds while individuals from higher socioeconomic backgrounds are unlikely to be affected.

Hypothesis 1. *Elections with high levels of economic hardship will produce low levels of turnout for individuals from lower socioeconomic backgrounds.*

The effect that inequality has on turnout is also likely to be contingent upon the socioeconomic status of the individual. Again, there is little expectation that high levels of inequality should have the uniform effect upon turnout often reported in the literature. Instead, I would expect that inequality should affect individuals differently depending upon their socioeconomic status, with the effect being greatest on those from higher socioeconomic backgrounds. Much as increased economic hardship is unlikely to dissuade individuals from higher socioeconomic backgrounds from voting, increased inequality would also have little negative effect as these individuals already enjoy a larger share of resources and would stand to benefit from higher levels of inequality. For those at the lower-end, increased inequality would only likely depress participation if rising inequality also meant a reduction of resources for these individual and as this eventuality should be captured by economic hardship, we can discount this possibility. Instead, it is probable that rises in inequality would be associated with mobilization, especially for individuals from lower socioeconomic backgrounds. Mobilization is predicted to occur when individuals become politicized and head to the polls to protest the inherent unfairness that rising levels of inequality bring to society, and as individuals from lower socioeconomic backgrounds have the most to gain from reversing rising inequality, I would expect that these individuals would participate at higher levels as inequality increases. This hypothesis is further strengthened by the

relatively low cost of voting compared to other forms of political participation. Again, if inequality is likely to be positively associated with a form of political participation, it is most likely to be associated with the relatively costless act of voting in a general election. In sum, if income inequality is to have any relationship with turnout, it is likely to be a positive relationship dependent upon socioeconomic status.

Hypothesis 2*. Elections with high levels of income inequality will produce high levels of voter participation for individuals from lower socioeconomic backgrounds.*

5. Model and Variables

The following analysis is based on data from the Comparative Study of Electoral Systems (CSES) which includes over 47,000 respondents across 21 democracies.[20] The CSES is a collaborative program asking common questions on elections and political parties across a variety of democracies. Four waves of surveys have been undertaken for the CSES, and data from the two latest surveys are utilized in this study. In recalling our hypotheses, it is expected that greater income inequality will *decrease* the probability of voting for individuals from lower socioeconomic backgrounds while higher levels of economic hardship will *increase* the probability of voting for individuals from lower socioeconomic backgrounds. The functional form of the model I propose is:

$$\text{VOTED} = a+b_1\text{INEQUALITY} + b_2\text{ECONOMIC HARDSHIP} + b_3\text{SOCIOECONOMIC STATUS} + b_4\text{SOCIOECONOMIC STATUS X INEQUALITY} + b_5\text{SOCIOECONOMIC STATUS X ECONOMIC HARDSHIP} + b_6\text{GENDER} + b_7\text{EDUCATION} + b_8\text{UNION} + b_9\text{AGE} + b_{10}\text{COMPULSORY} + b_{11}\text{EXECUTIVE} + b_{12}\text{PR} + b_{13}\text{CHAMBERS} + b_{14}\text{NUMBER OF PARTIES} + b_{15}\text{POPULATION} + b_{16}\text{WEEKEND VOTING} + e$$

[20] Descriptive statistics for all variables are presented in the Appendix.

The dependent variable, *Voted*, is a dummy variable with 1 indicating whether the respondent reported voting in the previous election and 0 indicating they did not vote. Out of a population of 77,365, 61,168 (79.1%), reported having placed a vote, 10,006 (12.9%) reported not voting and 6,191 (8%) was missing or the respondent refused to answer. Data for *Voted* alongside all subsequent individual variables were obtained from the CSES. The key independent variables are *Economic hardship* and *Inequality.* While it seems reasonable to suggest that economic effects may have a measureable effect upon turnout, capturing and measuring economic hardship is far from straightforward. Much of the existing research takes place at the individual level, examining how common predictors of economic hardship such as unemployment or feelings of economic well-being affect an individual's propensity to vote. However, much of this research is only from the American literature and routinely finds that individuals with personal economic problems are less likely to vote (Brody & Sniderman 1977; Kinder and Kiewiet 1981), that the unemployed are less likely to vote than those in full-time employment (Rosenstone 1982; Southwell 1988; Basinger, Cann, and Ensley 2012), and that those with greater resources such as time and money are more likely to vote than those with fewer resources (Rosenstone and Hansen 1993; Verba, Schlozman, and Brady 1995). When studies have examined the effect that broader economic measures at the national level may have on turnout, the results have been decidedly mixed. Broad measures of economic well-being such as economic growth and the unemployment rate have been examined in the American literature (see for example Fiorina 1977; Arcelus and Meltzer 1975) and comparative literature (Radcliff 1992; Aguilar and Pacek 2000; Norris 2002). With this in mind, and following convention from individual level studies, employment status is utilized from the CSES to capture economic hardship. *Economic hardship* is an individual level dummy variable obtained from the CSES with 1 indicating unemployed and 0 indicating in not unemployed.

The second key independent variable *inequality* is an aggregate measure of income inequality across countries. At the aggregate level, measuring income inequality is somewhat easier than capturing an appropriate measure of economic hardship. In the American literature there have been a handful of studies that have examined the effect that income inequality has on participation (Brady 2004; Galbraith and Hale 2008; Solt 2010; Lim and Sander 2013). However, until recently comparable data on income inequality at the national level has been scarce leading to relatively few comparative studies. This has changed in recent times with the release of a number of datasets that measure inequality across nations. The Luxembourg Income Study (LIS) is one such survey that allows for meaningful cross-national comparisons of income inequality between countries, and the Standardized World Income Inequality Dataset (SWIID) that standardizes measures of inequality in a fashion similar to the LIS. Most comparative studies have utilized the SWIID dataset, and that will be the data chosen for this study. The SWIID dataset constructs a standardized Gini coefficient which reflects the income distribution of the residents in each country, with a Gini index of 0 representing perfect equality, while a Gini index of 1 represent perfect inequality. To match up an inequality score to an individual from our surveys, the inequality score corresponding to the respondent's country and year is assigned.

The final key independent variable *socioeconomic status* is a continuous variable with 5 indicating the highest socioeconomic status and 0 the lowest socioeconomic status. As cross-national comparisons are difficult to achieve with any indicator of socioeconomic status other than income, the household income of each respondent from the CSES surveys is utilized for socioeconomic status.

Commonly utilized control variables at both the individual and country level are also included. Four individual level controls are included: (1) *Gender* is included, with 1 indicating male and 2 indicating a female; (2) *Education level* is the level of education, with higher levels of education indicated with

higher values; (3) *Union* is a dummy variable, with 1 indicating that the respondent is currently a member of a trade union; and (4) *Age* is a continuous variable, with higher age levels indicated with higher levels. Seven country level controls are also included: (1) *Compulsory voting* is a continuous variable, with 4 indicating compulsory voting with sanctions and 1 indicating that voting is not compulsory in legislative elections; (2) *Executive* indicates if there is a parliamentary democracy (1) a mixed democracy (2) or a presidential democracy (3); (3) *PR* is a dummy variable with 1 indicating an electoral system with strict proportional representation and 0 any other form of electoral system; (4) *Chambers* is the number of chambers in the legislature, with 1 indicating a unicameral system and 2 a bicameral system; (5) *Number of parties* is the effective number of parties in the most recent election; (6) *Weekend voting* is a dummy variable with 1 indicating the election is conducted at the weekend or is a national holiday and 0 any other day of the week and finally (7) *Population* is the log of the population.[21]

6. Results

6.1 Descriptive Statistics

The estimation below is based on data from 41 elections across 22 countries. In recalling our hypotheses, it is expected that high levels of inequality will produce high levels of voter participation for individuals from lower socioeconomic backgrounds, while high levels of economic hardship will produce

[21] The CSES surveys a wide range of democracies. The countries included in the 2011 to 2016 wave comprised of Australia, Austria, Belgium, Canada, Czech republic, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Japan, Mexico, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, USA. While the survey was also conducted in several other countries (including Belarus, Croatia, Chile, Hong Kong, Israel, Latvia, Peru, Philippines, Poland, Thailand and Turkey) as these are developing nations they were excluded from the analysis.

low levels of participation for individuals from lower socioeconomic backgrounds. To test our hypotheses, some simple descriptive statistics are examined and presented in Figure 4.1. Figure 4.1 includes those individuals who reported being unemployed and voted in the most recent lower house election. To illustrate how individuals respond differently to economic hardship, respondents are subsequently broken down by socioeconomic status with 1 the lowest socioeconomic status and 5 the highest. Figure 4.1 highlights how under conditions of economic hardship (unemployment) those from lower socioeconomic backgrounds participate at a lower rate than those from higher socioeconomic backgrounds. This also tentatively confirms our first hypothesis. The rates of participation differ quite starkly across the population, with individuals from the highest socioeconomic backgrounds voting around 35% more than those from the lowest socioeconomic backgrounds.

Figure 4.2 reports rates of voting by socioeconomic status under both low levels of inequality and high levels of inequality. The horizontal axis represents the respondents socioeconomic status (1=lowest and 5 =highest) and the vertical axis the rate of voting. Figure 4.2 illustrates how under high levels of inequality, those from lower socioeconomic backgrounds participate at a higher rate than those from higher socioeconomic backgrounds. This is represented by the downward sloping line which represents turnout rates at levels of inequality one standard deviation above the mean. Figure 4.2 tentatively confirms our second hypothesis: those from lower socioeconomic backgrounds participate at a higher level than those from higher socioeconomic backgrounds under high levels of inequality. When levels of inequality are low, represented by the upward sloping line, we find that participation rates only increase slightly as socioeconomic status increases. While this finding is somewhat surprising, others have found that high levels of inequality can reduce political participation for those from higher

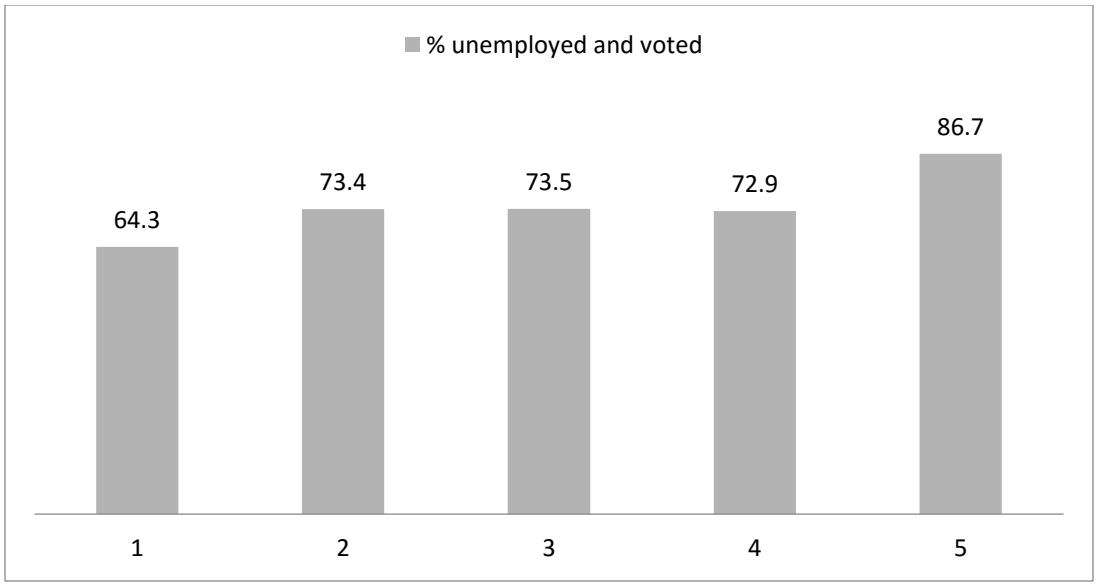

Figure 4.1. Rates of participation under economic hardship by socioeconomic status (numbers are percentages).

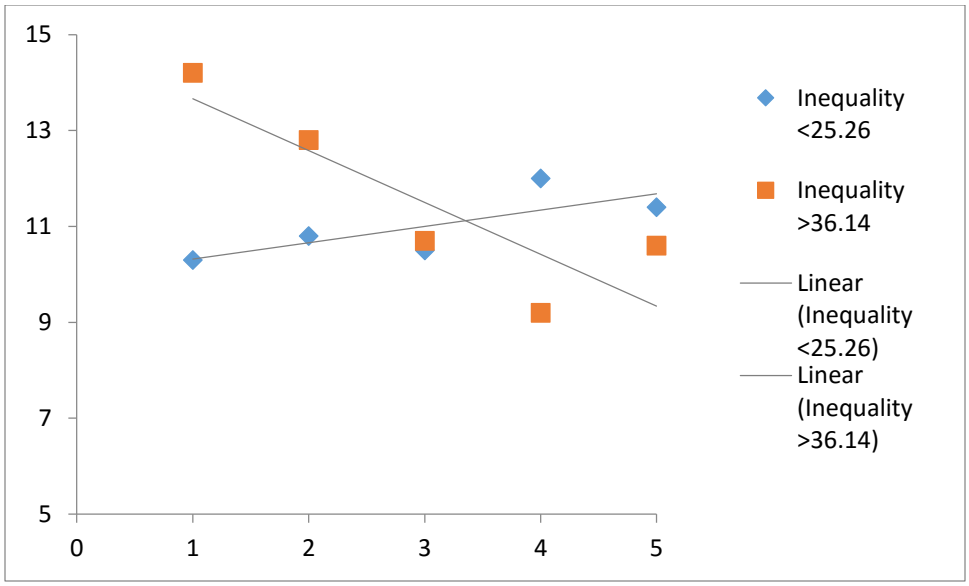

Figure 4.2. Rates of participation under low and high levels of inequality by socioeconomic status. Note: numbers are percentages.

socioeconomic backgrounds (see Lim & Sanders, 2013). Furthermore, Figure 4.2 does somewhat confirm our second hypothesis and the more general mobilization hypothesis. Recall that high levels of inequality would only likely mobilize those from lower socioeconomic backgrounds, Figure 4.2 highlights the dramatic effect that increasing levels of inequality has on turnout for those from the two lowest socioeconomic backgrounds. For those from higher socioeconomic backgrounds (notwithstanding those from the second highest socioeconomic background) changing levels of inequality have little effect on participation levels.

6.2 Regression Results

Multiplicative interaction models with country clusters and robust standard errors are estimated and presented in Table 4.1. Model 4.1 is our baseline model and includes all independent variables and controls but omits the 2 interaction terms. For our three key independent variables, we find that the results broadly as expected. While the effect is weak, inequality is significant and negatively associated with voting. Economic hardship is also significant and negatively associated with voting, while socioeconomic status is significant and positively associated with voting. In sum, all three of our key independent variables behave as expected and are broadly in-line with the literature. Model 4.1 also highlights the importance of including both inequality *and* economic hardship in models of turnout as both have significant effects upon voting. The individual level controls in Model 4.1 also behave as expected. Union membership, education level and the age of the respondent are all significant and positively associated with voting. The country level controls fair less better. The size of the population is significant and negatively associated with turnout as expected, however, compulsory voting and proportional representation are unexpectedly significant and negatively associated with turnout. While all three are only weakly significant, the literature would have predicted positive relationships with

Table 4.1: Income Inequality, Unemployment, Socioeconomic Status and Turnout (2005-2013)

Dep. Var.: Voted (1/0)	*Model 4.1 Estimates (S.E.)*	*Model 4.2 Estimate (S.E.)*
Inequality	-0.069**	-0.024
	(0.033)	(0.031)
Economic hardship	-0.463***	-0.623***
	(0.164)	(0.154)
Socioeconomic status	0.148***	0.709***
	(0.043)	0.079
Socioeconomic status*Inequality		-0.018***
		(0.002)
Socioeconomic status*Economic hardship		0.093***
		(0.035)
Gender	-0.031	-0.033
	(0.052)	(0.051)
Education	0.217***	0.230***
	(0.055)	(0.051)
Union	0.467***	0.458***
	(0.131)	(0.133)
Age	0.026***	0.026***
	(0.003)	(0.003)
Compulsory	-0.084**	-0.093**
	(0.044)	(0.043)
Executive	0.336*	0.362*
	(0.192)	(0.185)
PR	-0.565*	-0.581*
	(0.317)	(0.313)
Chambers	0.202	0.200
	(0.299)	(0.297)
Number of parties	-0.216	-0.219
	(0.142)	(0.140)
Population(log)	-0.087	-0.086
	(0.087)	(0.087)

Table 4.1: Income Inequality, Unemployment, Socioeconomic Status and Turnout (2005-2013) continued.

Dep. Var.: Voted (1/0)	*Model 4.1 Estimates (S.E.)*	*Model 4.2 Estimate (S.E.)*
Weekend	-0.320	-0.314
	(2.51)	(0.249)
Constant	4.583***	3.137**
	(1.749)	(1.697)
N	47776	47776
Pseudo r-squared	0.08	0.08
Prob > chi2	0.000	0.000

Note: Multiplicative interaction logit models controlling for country effects, robust standard errors in parentheses. Sign.: *p ≤ 0.10; **p ≤ 0.05; ***p ≤ 0.01.

voting for these three controls.

Model 4.2 includes the interaction terms between inequality and socioeconomic status and economic hardship and socioeconomic status respectively. The interaction term i*nequalityXsocioeconomic* status is significant and negatively associated with turnout, socioeconomic status remains significant and positively associated with turnout, and inequality loses significance. That inequality loses significance in Model 4.2 is perhaps not wholly unexpected, considering the conflicting effects that rising inequality is hypothesized to have on individuals from different socioeconomic groups. In other words, there is likely to be a lack of significance for inequality across the broader population if only those from lower socioeconomic backgrounds are hypothesized to be affected. Turning to economic hardship, we find that *economic hardshipXsocioeconomic status* is significant and positively associated with voting while economic hardship remains significant and negatively associated with turnout. The strong-showing for economic hardship in both of our models confirms our assertion that economic hardship should be unambiguously associated with turnout.

The coefficient on *Socioeconomic status*Economic hardship* is positive in Model 4.2 indicating that the negative effect of economic hardship on voting decreases as socioeconomic status increases. As this is substantively meaningless since our measure of socioeconomic status runs from 1 (low) to 5 (high), the impact of economic hardship is again estimated with socioeconomic status at a level greater than zero and presented in Figure 4.3. The sloping line highlights how the marginal effect of economic hardship changes with socioeconomic status, and illustrates the conditions under which economic hardship has a statistically significant effect upon voting. It is clear from Figure 4.3 that economic hardship has a negative effect upon turnout at low levels of socioeconomic status. This negative effect declines as socioeconomic status increases. When socioeconomic status goes above 3, economic

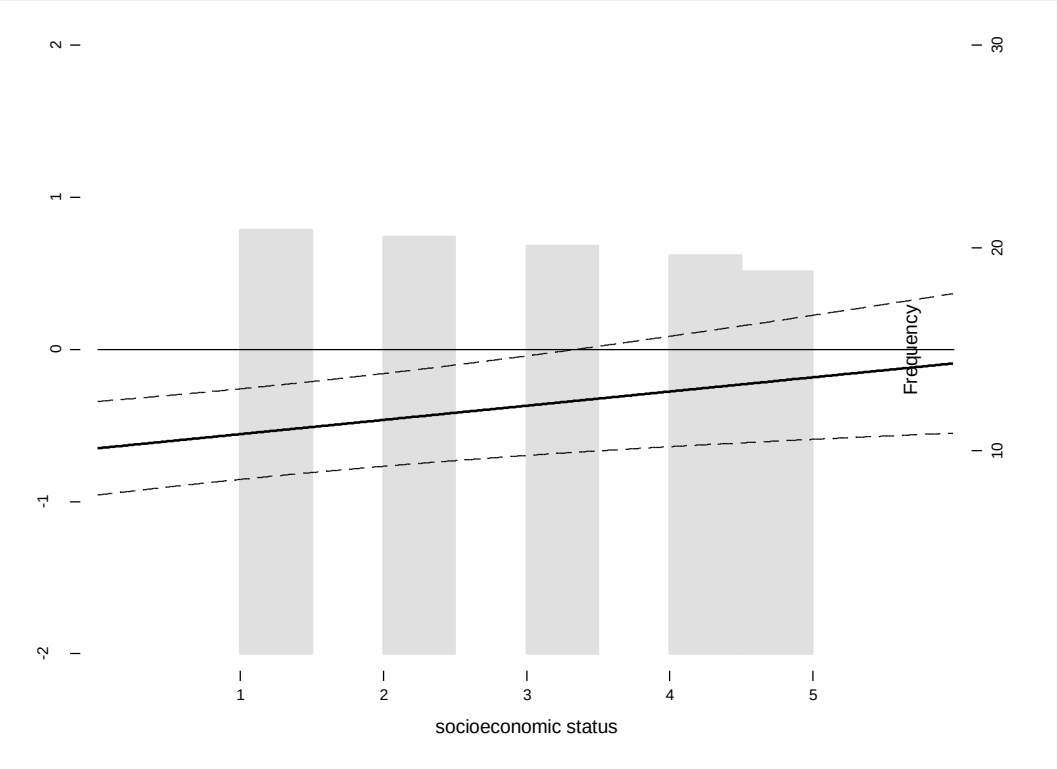

Figure 4.3: The marginal effects of unemployment on turnout at different levels of socioeconomic status.

hardship no longer has an impact upon voting. When examining which voters are from socioeconomic status below 3, 30,593 out of our sample of 71,174 (roughly 43 per cent) fall within the sample of significance. It is easy to imagine how participation rates for individuals from higher socioeconomic backgrounds would be unaffected by high levels of economic hardship as they possess greater resources, while high levels of economic hardship would have the potential to decrease participation rates for those from lower socioeconomic backgrounds due to their lack of surplus resources. In sum, high levels of economic hardship become less relevant for turnout as socioeconomic status increases confirming our second hypothesis.

The coefficient on *Socioeconomic status*Inequality* is negative in Model 4.2 indicating that the negative effect increases as inequality increases. The impact of economic hardship is then estimated with socioeconomic status at a level greater than zero and presented in Figure 4.4. The sloping line highlights how the marginal effect of inequality on turnout changes with socioeconomic status, and illustrates the conditions under which inequality has a statistically significant effect upon voting. Interestingly, Figure 4.4 illustrates how inequality only has a negative effect upon turnout with respondents from higher socioeconomic backgrounds. Recall I hypothesized that those from lower socioeconomic backgrounds would have a positive association with turnout as inequality rose, an effect that would dissipate at higher levels. In other words, I predicted a generally positive association between inequality and turnout. While the apparent null relationship for those from lower socioeconomic backgrounds is hardly unusual, the finding that declining turnout is being driven by those from higher socioeconomic backgrounds is quite unexpected, after all, these are the individuals who stand to benefit most from higher levels of inequality. While somewhat perplexing, the effect is still quite small as the coefficient for *Inequality* in the fully specified model from Table 4.1 is not significant.

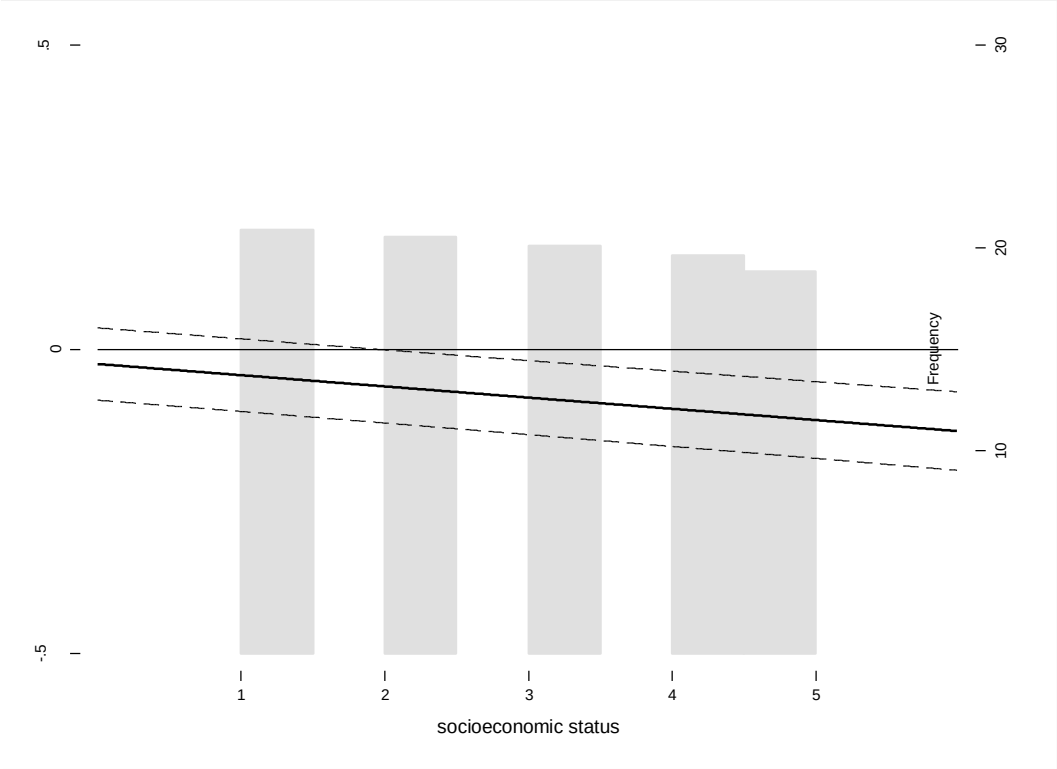

Figure 4.4. The marginal effects of inequality on voter turnout at different levels of socioeconomic status.

As it is possible for the interaction term to be insignificant and the marginal effects to be significant in certain relevant values of the modifying variable, following (Brambor et al., 2005) the marginal effects of inequality on socioeconomic status is also examined. The sloping line in Figure 4.5 indicates how the marginal effects of socioeconomic status changes with inequality and illustrates the conditions under which socioeconomic status has a statistically significant effect upon inequality. Figure 4.5 highlights that socioeconomic status has a positive effect upon turnout when inequality is at low to moderate levels, and this effect declines as inequality increases. When the inequality score is more than 42, socioeconomic status changes to have a negative effect upon turnout.

7. Discussion

Clearly there are good reasons for including economic measures in any analysis of voter turnout. However, the literature has largely failed to make a compelling case as to why factors such as economic hardship or income inequality should be associated with turnout. Many have previously made a compelling theoretically case that withdrawal should follow increased economic hardship, however, conclusive evidence has proved largely illusive. On the other hand, others have also presented robust empirical evidence for withdrawal following increasing inequality but theoretical justifications for this effect have often failed to convince. The main contributions that this chapter makes is to propose that models of turnout should include both economic hardship and income inequality and also take into account how socioeconomic status interacts with these economic factors.

Results confirm the negative effect that economic hardship has on turnout, a relationship that remains strong even when a second economic indicator, income inequality, is included in the model. The

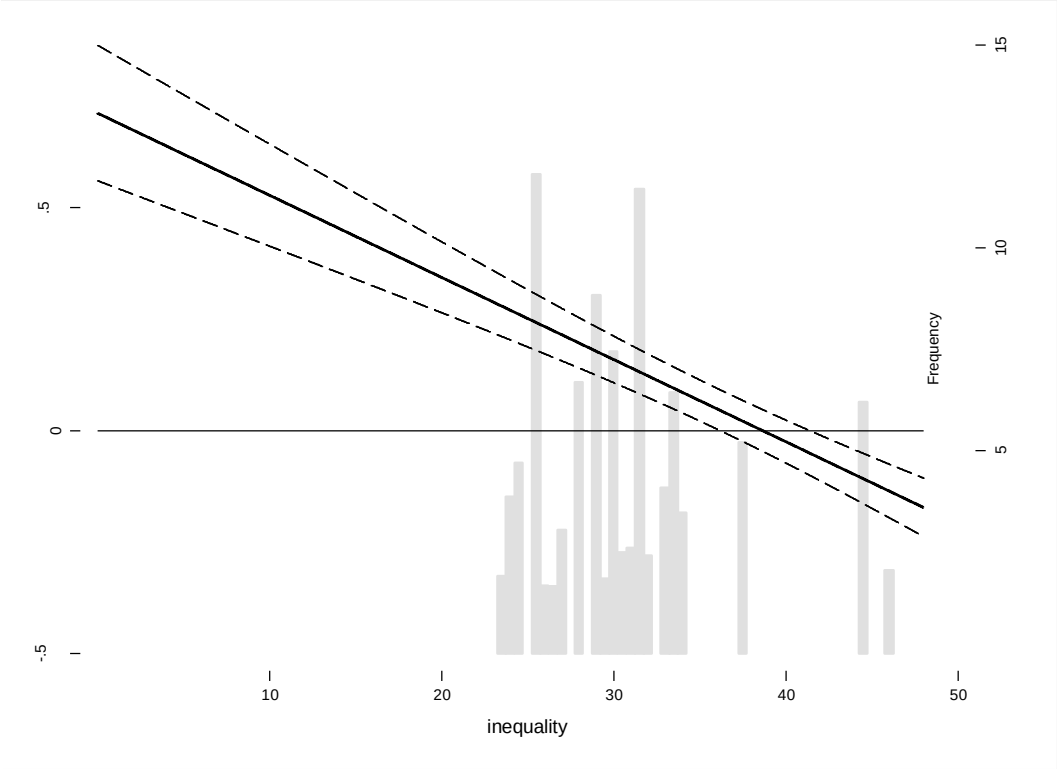

Figure 4.5: The marginal effects of socioeconomic status on turnout at different levels of inequality.

theoretical basis for expecting a strong negative relationship is compelling and the results presented in this chapter support the proposition that withdrawal should follow economic hardship. Intuitively, withdrawal also seems most likely especially considering the strong positive relationship between socioeconomic status and political participation. Furthermore, the finding that economic hardship negatively affects rates of participation for those individuals from lower socioeconomic backgrounds is further evidence in support of the withdrawal hypothesis. That the participation rates of those individuals with the fewest resources would be most affected by economic hardship makes logical sense considering the causal mechanism predicted by the resource-model of participation. In other words, these are the individuals hypothesized to withdraw from participation as economic hardship increases.

This chapter also provides some insights into the role that inequality plays, or does not play for that matter, in turnout. Results highlight the negligible effect that inequality has on turnout in a fully specified model, as it largely fails to have a significant effect upon participation. The results confirm the suspicion that far from having an independent effect upon turnout, much of the predicted negative association dissipates in a fully specified model with an appropriate measure of economic hardship. In sum, to capture the effects of the economy on turnout, economic hardship performs far better than inequality.

This chapter's second finding of note, that rising inequality is shown to negatively affect participation for individuals from higher socioeconomic backgrounds, is of course somewhat unexpected. Recall that arguments for withdrawal are largely based upon the notion that political parties prioritize the needs of those with greater levels of resources and ignore the needs of those from lower socioeconomic backgrounds who are harder to mobilize, this results in higher levels of inequality and further withdrawal for those from lower socioeconomic backgrounds. This second finding

contradicts this theory, instead showing that those from higher socioeconomic backgrounds withdraw from voting as inequality increases. While this finding does echo the work of Lim and Sander (2013) who found that even those from higher socioeconomic backgrounds engaged in less civic and political participation under high levels of inequality (however voting was not considered), it is still not clear what is causing withdraw for these individuals. After all, these are the individuals who stand to benefit most from higher levels of inequality.

While there is a rich debate as to how income inequality potentially affects turnout, the results presented in this chapter provide some suspicion that instead of having any discernable effect upon turnout, the possibility exists that a spurious correlation or omitted variable problem may be driving this relationship all along. After all, if the theoretical reasoning fails to convince and the literature reports mixed findings, it is somewhat difficult to argue that inequality should have any effect upon turnout whatsoever. The results presented in this chapter alongside some underwhelming findings from the literature suggest this conclusion is perhaps as likely as inequality having a clear relationship with turnout.

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Appendix

Table D1: Descriptive Statistics

Variable	Mean	SD	Min	Max
Vote	0.86	0.35	0	1
Inequality	30.70	5.44	23.23	45.78
Economic hardship (unemployed)	0.05	.218	0	1
Socioeconomic X inequality	89.63	45.61	23.23	229.39
Socioeconomic X economic hardship	0.10	0.53	0	5
Gender	1.53	0.50	1	2
Education	5.27	1.81	1	9
Union	0.22	0.41	0	1
Age	49.53	17.53	17	106
Compulsory	3.71	1.79	1	5
Executive	1.39	0.68	1	3
PR	0.48	0.50	0	1
Chambers	1.62	0.48	1	2
Number of parties	4.52	1.22	2.16	6.97
Population (log)	16.67	1.62	12.65	19.56
Weekend voting	0.59	0.49	0	1

Measures and Coding: Country-Level Data

Number of parties: The effective number of parties at the electoral level. Source: Gallagher, 2014 (www.tcd.ie/Political_Science/staff/michael_gallagher/ElSystems/index.php, accessed Jan 2015.)

Population: Estimated population size in millions. Source: The World Bank (www.worldbank.org).

Proportional representation: A (0,1) dummy variable that takes the value of 1 if a country has list PR.

Weekend voting: Elections held on Sunday (1), other day off the week (0). Source: Klaus Armingeon, Laura Knöpfel, David Weisstanner and Sarah Engler. 2014. *Comparative Political Data Set I 1960-2012.* Bern: Institute of Political Science, University of Berne.

Executive: A (0,1) dummy variable that takes the value of 1 if a country has a unicameral system.

Compulsory voting: Source: A discrete variable with 1 representing strictly enforced compulsory voting with sanctions and 5 no compulsory voting. Source: Comparative Study of Electoral Systems (CSES)

Chambers: The number of legislative chambers with 1 representing a unicameral system and 2 a bicameral system. Source: Comparative Study of Electoral Systems (CSES).

CHAPTER V: CONCLUSION

1. Overview of the Dissertation

The motivation for this dissertation was to try to better understand the reasons behind declining turnout. Previous comparative research had explained much on how institutional factors lead to varying levels of turnout across democracies. However, much less has traditionally been known as to why turnout continues to decline within many democracies. As most institutional factors have little scope to vary, and consequently less potential to explain declines within countries, other more dynamic factors such as party systems and economic factors were considered throughout this dissertation. Historically, both party systems and economic factors have had only marginal success in explaining declining levels of turnout. Both have suffered from conflicting and at times puzzling empirical results, alongside poorly conceived theoretical expectations used to justify many of these results. This has frequently resulted in both party systems and economic factors being routinely ignored in many comparative models of turnout. However, both of these factors have common characteristics which make them potentially interesting areas of study. Firstly, both party systems and in particular the economy, have much potential to vary across time. Secondly, many commentators have identified a narrowing in many party many systems since at least the 1980s. As this timeframe also coincides with the steepest declines in voter turnout in recent decades, the potential for uncovering an association is obviously high. In short, both factors have much potential to explain recent declines in turnout within democracies.

In many ways, results from this dissertation justify a reappraisal of how party systems and the economy can potentially affect turnout. Both Chapter II and Chapter III highlight the benefits of including party systems in comparative models of turnout. In particular, Chapter II highlights the usefulness of more fully appraising how we should conceptualize and subsequently operationalize party systems. Results show that voters do not simply respond to the number of parties or levels of

polarization, instead, the composition of the party system as a whole is a key determinant of a voter's propensity to vote. A highly polarized party system with few parties spurs individuals to vote, while a system with low levels of polarization and many parties reduces incentives to vote. Party systems that do not represent either of these extremes fail to affect turnout levels to any meaningful extent. Much of the debate on how party systems affect turnout has centered on the number of parties. A further contribution of Chapter II is to resolve much of the confusion surrounding number of parties' expected effect upon turnout by clearly illustrating under which conditions number of parties can depress turnout. In short, number of parties only has a negative effect upon turnout when polarization levels are high. Without understanding how polarization and number of parties interact, the effect that party systems have on turnout is only partially understood.

Clearly, results presented from Chapter II show that party systems can affect turnout. After all, it would be somewhat surprising if the character of party systems had no effect on turnout, as in choosing a party some considering of the choices on offer is surely made. While many voters may vote without such an appraisal, it would seem unlikely that all voters behaved in such a manner and made no appraisal of the choices presented to them in an election. The choices presented to voters alongside the potential consequences of an unfavored party winning an election, create incentives and disincentives for participation. In an extension of our first finding, a further refinement of how party systems affect turnout is uncovered in Chapter III. While the previous chapter highlighted the usefulness of party systems in explaining turnout by interacting commonly used proxy measures, Chapter III examined more closely exactly *where* variation is expected to occur in party systems that may affect turnout. Many studies have operationalized measures of party systems on the aggregate level making the assumption that individuals would react uniformly to changes in party systems: more choice and diversity on the

right would be expected to have a similar effect on turnout as more choice and diversity on the left. However, this approach ignores the resource model of participation which argues that individuals from higher socioeconomic backgrounds have greater incentives to participate in politics than individuals from lower socioeconomic backgrounds who have fewer resources. Findings from Chapter III show that this previous assumption is incorrect, with results showing that party systems with high levels of left-party diversity are positively associated with turnout, while party systems with high levels of right-party diversity have no effect upon turnout.

Again, the findings from Chapter III make intuitive sense considering what we know about who votes and which parties these individuals are likely support. By unifying the resource model of participation to party systems, we can better predict the effect that changes to party systems have on turnout. Although results show a positive association between left party strength and turnout, it could be speculated that the emergence of populist parties on the far-right may also have a similar effect on turnout. If it turns out that these populist parties attract large numbers of non-voting individuals from lower socioeconomic backgrounds, higher levels of turnout may also be expected with more support for these types of parties. However, it is still unclear if these voters are being culled from the ranks of the non-voting or are instead defecting from more moderate parties on the right. In other words, it is entirely possible that these are individuals who would have voted anyway and so the effect in turnout may be marginal at best. Although more research may be of help here, results from Chapter III also fail to show any similar effect on the right. Nevertheless, more research in this area may be of much interest, especially if these populist movements on the right continue to grow in the future.

Economic factors are also shown to have an effect upon turnout. Again, much like party systems there is good reason to expect that the economy should have an appreciable effect upon turnout. While

not as intrinsically connected to the democratic process as party systems, the economy long been known to have the potential to dramatically affect the electoral prospects of incumbent political parties. Furthermore, socioeconomic status is also strong predictor of political participation at the individual level. However, much like party systems results have been somewhat mixed. Studies failed to find a consistent relationship between economic hardship and turnout, leading to conflicting theoretical expectations and spotty empirical findings. These patchy results have led some to pursue alternative economic factors as potential indicators of turnout. Income inequality is one such factor that has begun to receive attention in contemporary literature. Again, results have been mixed but when empirical evidence has been reported, most studies report a somewhat surprising negative association with turnout. Explanations for this relationship are often based upon the theoretical argument that increased inequality leads to those with the fewest resources withdrawing further from political participation, an effect compounded by political parties subsequently ignoring the concerns of these individuals. This all leads parties to campaign on the concerns of those who vote more consistently, yet again negatively impacting the participation of these groups.

There are, however, good theoretical justifications for including both economic hardship and inequality in any model of turnout. The main contributions from Chapter IV is to propose that models of turnout should include both economic hardship and income inequality but also take into account how socioeconomic status interacts with both of these factors. In short, the effects that both economic hardship and income inequality has on turnout will differ depending upon the socioeconomic status of the individual. Results confirm the overall negative effect that economic hardship has on turnout, a relationship that remains strong even when income inequality is included in these models. The theoretical basis for expecting a strong negative relationship is compelling and the results presented in

Chapter IV support the notion that withdrawal should follow economic hardship. Intuitively, withdrawal also seems likely especially considering the strong positive association between socioeconomic status and political participation. Results also showed that participation rates of those individuals with the fewest resources would be most affected by increased levels of economic hardship. Again, this makes much theoretical sense considering that these individuals are hypothesized to be most at risk of withdrawal as economic hardship increases. The suspicion was also confirmed that overall inequality has little potential to be negatively associated with turnout. Results show that far from having an independent effect upon turnout, much of the predicted negative association dissipates in a fully specified model with an appropriate measure of economic hardship. Therefore, to capture the effects of the economy on turnout, economic hardship appears to perform far better than inequality.

Finally, the finding that rising inequality is shown to negatively affect participation for individuals from higher socioeconomic backgrounds is, of course, somewhat surprising. This relationship is difficult to understand as it is unclear what is exactly driving withdrawal for these individuals. After all, these are the individuals with the most to gain from higher levels of inequality. One explanation is perhaps that inequality only appears to be related to voting when in fact a confounding variable may be related to both inequality and turnout. Alternatively, there is also the possibility that, for yet unknown reasons, these individuals may be instead pursuing alternative forms of civic participation. What is clear, however, is that the withdrawal hypothesis does not predict such an outcome. Recall that arguments for withdrawal are based upon the assumption that as inequality increases those from lower socioeconomic backgrounds will be most at risk of dropping-out of the electoral process. It is these individuals, and not those from higher socioeconomic backgrounds, who are predicted to drive lower levels of turnout. My findings that those from higher socioeconomic backgrounds are less likely to participate as inequality

increases, seriously undermines the inequality hypothesis. In short, a complete reappraisal of this potential relationship may now be in order.

2. Full Country Level Model

Chapter II and Chapter III include several novel measures of party system strength and will be discussed more fully below. Table E1 includes all country level control variables in addition to the interaction of *parties* and *polarization* and my novel measures *left party strength* and *right party strength.* The results from this complete country level model broadly echo findings from earlier chapters, all signs continue to point in the same direction and only one variable *parties* loses significance. The key independent variables from Chapter II remain much as they were, with the interaction term *parties*polarization* and *polarization* remaining significant and both of the key independent variables from Chapter III also behaving as expected. R*ight party strength* also remains statistically insignificant, while *left party strength* remains negative and statistically significant, indicating that party systems with high levels of left-party diversity are positively associated with turnout.[22] The control variables also continue to follow convention with *population* having the expected negative and statistically significant association with turnout, while *PR, founding*, and *compulsory* are all statistically significant and positively associated with turnout. The coefficient on *unicameralism* is also positive and highly significant and while this is predicted by the literature, the strong showing of *unicameralism*

[22] Recall that the CMP calculates a party's ideology score from the parties manifesto, producing a value which reflects either a left party (a negative score) or a right party (a positive score), thus a negative coefficient confirms that left party strength in fact has a positive relationship with turnout.

Table 5.1: Fully specified party system model (1945-2013)

Dep. Var.: *Voter turnout*	*Estimates* *(S.E.)*
Polarization (log)	3.848**
	(1.811)
Parties	3.007
	(1.893)
Parties*polarization	-0.701*
	(0.355)
Left party strength	-1.449*
	(0.780)
Right party strength	0.218
	(0.888)
Population	-0.223***
	(0.058)
PR	8.573***
	(0.731)
Weekend	-2.187
	(3.934)
Founding	7.957*
	(3.928)
Compulsory	12.619***
	(2.365)
Unicameralism	2.389***
	(0.432)
Closeness	-0.057
	(0.057)
Constant	60.324***
	(10.665)
N	431
Within r-squared	0.39
Prob > chi2	0.000

Note: Multiplicative interaction models with fixed effects for countries and years, robust standard errors in parentheses. Sign.: *p ≤ 0.10; **p ≤ 0.05; ***p ≤ 0.01.

throughout this dissertation has been somewhat of a pleasant surprise. Unicameralism has been often ignored in many empirical analyses of voter turnout at the country level, and when it has been included, has realized only mixed success as a predictor of turnout. However, the statistically significant positive association throughout this dissertation would indicate that the number of chambers in fact an important predictor of turnout. Overall, the results presented In Table E1 are as expected. Key independent variables and controls behave very similarly to the models presented earlier in the dissertation and follow convention from the literature. While the key independent variables from chapters II and III do lose some significance, this is not unexpected considering that these variables are all competing to capture the effects of party systems on turnout.

VITA

Allan Mark Wilford was born in Norton-Upon-Derwent, United Kingdom, to the parents of Andrew and Linda Wilford. He is the second of 2 children, Joanne being older sister. He attended Norton-Upon-Derwent Secondary School and continued to Malton Sixth form College to study A-levels. After graduation and a period working for the family firm, he headed to the University of Lincoln where he developed an interest in International Politics. He obtained a Bachelor of Arts degree from Lincoln in 1999 with concentrations in Social Policy and Criminology. In 2001 Allan enrolled in a masters degree at the University of Hull, and graduated in 2001 with a Masters in International Law and Politics. After a hiatus of several years helping to raise a young family, Allan accepted a graduate teaching assistantship at the University of Tennessee, Knoxville, in the Political Science department.